American Druggist

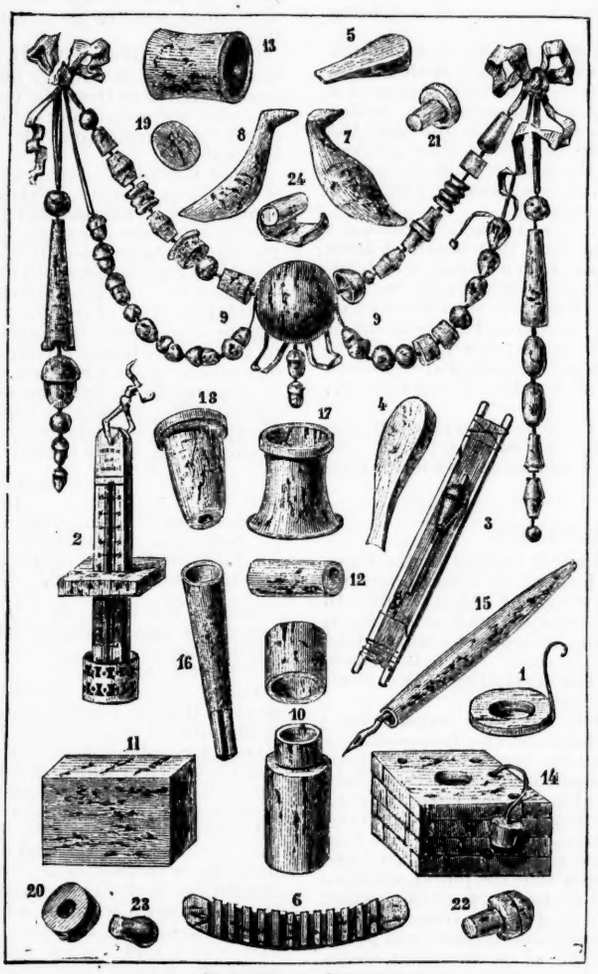
Vol. XVI. No. 6. NEW YORK, JUNE, 1887. Whole No. 156.

GRANULAR NITROGEN MONOXIDE.

BY J. U. LLOYD.

RECENTLY considerable attention has been given the use in medicine of certain gases; among these can be named a treatment known as a compound oxygen treatment, about which perhaps little is known to the general practitioner of medicine. Those who use the method, it seems, purchase the privilege, as I understand it, of making the gas to use in their practice, and perhaps they agree not to impart the process to others. Be this as it may, considerable demand has arisen for materials that are used in the making of these gases, among them one substance under the name "nitrogen monoxide granular." This is usually included in the order with chlorate of potassium, nitrate of potassium, and black oxide of manganese, and those who desire these substances wish all or none; therefore I would suppose that in order to produce the gases a mixture of these substances and perhaps others is needed.

That this compound oxygen treatment is considerably employed throughout the country is evident from the demand for the ingredients, even though it is probable the introducer of the treatment supplies the chemicals himself as well. A short time ago a physician acquaintance of mine wrote me regarding those substances, and I answered that if he would send me a sample of the material that he had received under the name nitrogen monoxide granular, I would see if it could be supplied from the general drug market. In return I received about half a pound of a granular powder which, upon examination, proved to be granular nitrate of ammonium, and if this is the substance that is being generally supplied under this name, it will be seen that probably one of the gases employed in the compound oxygen treatment is the well known laughing gas. It is not my object to assert that under all conditions nitrate of ammonium is known to these parties as granular nitrogen monoxide; neither do I attempt to prove or disprove the theory of those who use this gas treatment under the name compound oxygen. The association of substances that I have named would indicate that, while not an individual chemical compound, the product of the combination may be a mixture of oxygen and laughing gas, and it is not improbable that in time to come such substances will receive more attention than heretofore from the medical profession. Perhaps others like myself have met this nitrogen monoxide problem, and perhaps to others this communication may be of some interest.



DESCRIPTION OF OBJECTS.

1. Float for Night-Lamp. 2. Floating Thermometer (for Baths, etc.). 3. Fish Line and Dobber. 4 and 5. Cork Soles. 6. Sweat Band. 7 and 8. Cork Bird-Bodies for Ladies' Hats. 9. Forms for Trimmings. 10. Box and Cover. 11 and 12. Bottle Cases. 13. Silk Bobbin. 14. Inkstand. 15. Penholder. 16. Cigar holder. 17. Watchmaker's Lens. 18. Nipple Shield. 19 and 20. Discs. 21, 22, 23. Stoppers. 24. Cork in course of manufacture.

Oleum Pini Sylvestris.—Ol. Pini Sylvestris appears to have a rather bad effect upon the kidneys when administered to some patients. Mr. A. M. Hynes mentioned two cases (*Brit. Med. Journ.*) of elderly men who suffered from chronic bronchitis and were ordered five drops of the oil every three hours as an emulsion. Two or three days of this treatment brought on severe pain in the renal region, followed by strangury and painful micturition with bloody urine. The symptoms disappeared when the remedy was stopped.

SOME USES OF CORK.

THOUGH cork has been known and gathered in ancient times, and has been used for certain technical purposes ever since, yet it is only within a comparatively recent period that its almost unlimited applicability to the most varied purposes has been recognized.

It is not our intention here to give a description of the tree from which the commercial cork is obtained, nor to describe its method of collection. All of this will be found in previous issues of our journal. But an interesting article on cork, recently published in *La Nature*, has suggested to us that many of our readers might be able to obtain useful and practical hints from the uses of cork there mentioned.

Leaving out of view the employment of cork in surgery (artificial limbs), and in other scientific disciplines, we will turn to its domestic applications. Here we find it employed as bath-steps; as rolling pins for the confectioner, since it crushes almonds without absorbing their oil, as owuld be the case with wood; thin sheets of it are used as fancy labels upon wine bottles, the imputrescibility of cork renering their duration assured. The ease with which cork may be cut, turned, and worked renders it very serviceable for small objects, and as rural landscapes, and the reproduction of monuments. Next might be mentioned cork mailing boxes of a variety of shapes and sizes, for transmitting bottles by mail; bobbins for the economic transfer of silk; inkstands, familiar to us from our young days; pen-holders, thick and light, a protection against the writer's cramp; cigar holders, and a host of other objects too numerous to mention. There is probably no profession that does not make use of cork in some shape or other. From remote times, polishers of gold have used it in form of narrow strips, upon which the objects are rubbed with rouge; cork is also used as a facing for wheels which are employed in polishing crystals. In the accompanying cut there is seen (Fig. 17) a watchmaker's lens made of cork, which, owing to its lightness, does not tax the muscles of the orbit of the eye. It has also become customary to face driving pulleys with strips of cork glued upon them, to make them more adhesive. In carpenter shops, these bands now replace with advantage the caoutchouc bands upon which the band-saw runs. The old stoppers of nursing bottles are now being replaced by more sanitary stoppers made of cork, which are cheap and can frequently be changed whenever the presence of a ferment is suspected in them. Cork is also used for a great number of children's toys. For instance, it serves for fixing the wig upon doll's heads. It will scarcely be necessary to recall the corks of pop-guns and pistols, and the battledoor and shuttlecock of cork for indoor play. And so this list might be extended almost indefinitely.

The manufacture of corks and of other objects made of cork-wood furnishes a considerable quantity of chips, which together with the waste derived from the collection and from condemned corks constitutes the crude material for supplying certain important industries depending upon them.

First, there is the cork powder industry. The coarser powder is employed for packing fragile objects; the finer

constitute what is called in France *liégine* or *subérine*, which are used as baby-powder, in place of lycopodium or starch. Under the name of zifa powder, there has been made an insecticidal preparation composed of powdered cork mixed with phenol. Cork powder has also been used for tapers or fire-lighters, but the latter two applications have not been very successful.

The most extensive use to which cork powder has been put is Linoleum. This grand technical invention originated in Scotland and is now known everywhere. Linoleum is prepared by intimately mixing cork powder with boiled linseed oil. The resulting paste is extended upon cloth if it is desired to make carpets, or upon paper for hangings. Linoleum may be tinted, colored, embellished by designs; it may be applied to damp walls, as a solid and impenetrable substratum for oil-paintings, which are more lasting upon it than upon wood. It may also be used for making plafonds for meeting rooms, cafés, etc., and this has the advantage that it may be washed when it is blackened by dust or smoke. Like a carpet, linoleum renders the floors perfectly insonorous, and, when employed in kitchens and offices, it has the advantage of not being stained by grease.

Cork powder is used, mixed with starch, as a medium for covering steam-pipes and boilers. Mixed with milk of lime, coarse cork powder is used, in form of bricks, for the construction of party walls, the lining of damp walls.

In the cellars of breweries these bricks diminish the melting of the ice. In gunpowder works they prevent the absorption of moisture by the powder, and in case of an explosion, the damage is much less serious, owing to the lightness and friability of the material.

Cork waste, when distilled in closed vessels, furnishes a gas which is more illuminating than that obtained from coal tar, without having the sulphurous taint which injures the ornaments of our homes or offends the nostrils. During some time, the city of Nérac was thus illuminated by cork gas, but this had to be abandoned on account of the difficulty of storing the crude material, which, owing to its lightness, takes up an immense amount of space. Cork gas appears to be an excellent material for filling balloons, as it is so light and pure.

Finally, cork trimmings and refuse, when properly carbonized, furnish "cork-black," or "Spanish-black," one of the finest blacks known and the most indelible or resistant known to painters.

Note on Blaud's Pills.

At a meeting of the North British branch of the Pharmaceutical Society recently held at Edinburgh, several papers were read on the preparation of Blaud's pills. In the discussion which followed, the same point was brought out which had been made some time ago by Martindale, viz., that the granulated [or the dried] sulphate of iron produced a better pill than the crystallized. Mr. Peter Boa made the following statement:

The original formula, which was ferri sulph., ℥ss.; potass. carb., ℥ss.; pulv. althææ, 30 gr.; tragacanth, q. s., cannot be made up without the conversion of a great part or the whole of the iron of salt into ferrous carbonate. Some medical men have the idea that the chemical reaction takes place in the stomach, and he quoted from one authority who was very positive on this point. He concluded, however, that the majority of pharmacists and medical men were of the opinion that the pill should contain ferrous carbonate, and this took him to the second part of his subject—the best method of preparing the pills. He showed that equal parts of ferrous sulphate and potassium carbonate, with tragacanth as an excipient, sometimes gave a pill so hard as to be insoluble in the stomach. This objection was partially remedied by the addition of sugar, which, however, made the pills too bulky. The granulated sulphate of iron is to be preferred to the ordinary crystallized. Apart from the fact of greater purity (a sample of the former contains 57 per cent $FeSO_4$, and of the latter 54.73 per cent), the granulated gives a pill-mass which is firmer, looks better, and keeps better than one made with crystallized.

The author then proceeded to comment upon the physical appearance of the granulated sulphate as compared with the crystallized, and showed how much more desirable a preparation the former is. He believed it to be a matter of primary importance that granulated ferrous sulphate should be used in the preparation of Blaud's pills.

The formula which he found to give constant and satisfactory results is the following:

Granulated Ferrous Sulphate (B.P.)	30 grains.
Potassium Carbonate (15 to 16 per cent H_2O)	20 "
Pulv. Sacchari Alb	10 "
" Tragacanth	3 "

Rub the iron and sugar together, then add the potash, and after trituration add the tragacanth and beat into a a mass for twelve pills. This formula approximates closely to Martindale's. Each pill contains theoretically a little over one grain of ferrous carbonate. Speaking about coating this pill, Mr. Boa remarked that they keep for a time with only trifling oxidation, they are practically tasteless, and, everything considered, he saw no reason why they should be coated.—*Chem. and Drugg.*

[Note by Ed. Am. Dr.—Experiments made by members of the National Formulary Committee have conclusively shown that an excellent pill is produced when the iron and potassium salts are in equivalent proportions. At all events there should not be an excess of potassium carbonate. The proportions: 240 grs. of cryst. sulphate of iron and 140 grs. of carbonate of potassium (containing about 81–83% K_2CO_3) will be found to work satisfactorily.]

Notes on Essential Oils.*

Oil of Anise.—The quality of anise [presumably Russian] offered to the distillers during 1886 was very unsatisfactory, and much had to be rejected. A large amount was mixed with brownish grains, and some of it with anise deprived of oil. Heretofore the only adulteration that was practised in the case of anise was the admixture of earthy matter. Hereafter, it will be necessary to look further.

[In the last number will be found an interesting paper by Mr. C. L. Lochman, drawing attention to the presence of conium seed, in very large amount, in the Italian anise.]

The pure *anethol*, recently put in the market—differing from what was previously known under this name by its absolute freedom from the light hydrocarbon of disagreeable odor accompanying it in the original oil—is acknowledged by connoisseurs to be the finest anise essence ever obtainable.

Oil of Valerian.—Japan now exports an oil of valerian of excellent quality, which is found to be chemically identical with that distilled in Germany from valerian. It seems that the Japanese oil is derived from the root of *Patrinia scabiosæfolia* Link.

Light Oil of Camphor.—This light hydrocarbon, which is obtained in very large quantities as a by-product in the distillation of oil of camphor (for the purpose of extracting the safrol, etc.), is highly recommended as a substitute for the ordinary solvents of resins, etc., in technical operations, such as making varnishes, washing type, etc. It appears to possess one advantage which makes it of special value, namely, it requires a higher temperature for ignition than any other solvents, even higher than the oil of turpentine, as the following comparison will show:

	Oil of Turpentine.	Light Oil of Camphor.
Spec. Grav.	0.870	0.895–0.900
Boils at	160°C. (320° F.)	175° C. (347° F.)
Takes fire at	37.7° C. (93° F.)	44.5° C. (112° F.)

(barometer at 763 Mm.

Besides the light oil, a heavy camphor oil hydro-carbon is now also obtained. This has a spec. grav. of 0.960–0.970, possesses a green color, and boils at between 240°–270° C. (464°–518° F.).

Oil of Cinnamon (*Cassia*).—In spite of the very low price of this oil, adulterations are occasionally practised. Schimmel & Co. give the following hints for their detection. A reliable criterion of the character of the oil is the specific gravity, which should be at least 1.068 at 15° C. (59° F.). There is no suitable adulterant which does not possess a lower specific gravity. Hence, if the oil shows a lower gravity than 1.068, it should be regarded as spurious. Schimmel & Co. find it impracticable to describe in detail their method of separating other oils, but fractional distillation probably constitutes one of the main operations, combined with the solvent action of alcohol of different strengths. In some oil of cassia recently examined, and which had a spec. grav. of only 1.029, they found about 30% of oil of cedar wood (the spec. grav. of which is only 0.945).

Oil of Citronella.—Some twelve years ago, the annual production of this oil amounted to a few thousand ounces. In 1881, it has risen to 1,760,677 oz., and in 1886 to 6,461,278 oz. As a result, the price in Ceylon has fallen from 3 rupees per bottle of 22 oz. to 1 rupee, leaving no more profit to the producer. A large portion of the oil is exported to New York in iron drums holding several hundred pounds each. Formerly it was packed in old wine bottles, but this has been found too wasteful and costly.

The German Consul at Colombo, Mr. Freudenberg, reports that citronella oil is now produced almost exclusively in the southern provinces of Ceylon, partly by wealthy natives who possess large plantations and partly by poor people who cultivate small pieces of ground only. The former distil the oil in regular stills, by means of steam; the poor natives boil their grass [*Andropogon Nardus* L.] in small kettles, and construct a primitive still with earthen vessel. Of course, they only produce a few flasks, which they sell to agents of European houses. One plantation, viz., that of "Winter," is in European hands, and the product of this has an especially good reputation. Formerly the oil was also produced at Gykianekande, between Galle and Colombo, by Foulkes & Knight (the oil was known in trade by the mark F. & K.), but at present it does no longer pay the proprietors to produce it.

Citronella oil is distilled almost throughout the whole year, the principal periods being December–January, March–April, and July–August. Good plantations yield

* Circular of Schimmel & Co., of Leipzig, April, 1886.

three crops at about the times mentioned. A well-kept plantation yields thrice a year 24 bottles per acre, making a total of about 90 lbs. per acre; a poor one only 18 bottles twice a year. The greatest drawback in the manufacture is the want of fire-wood, and besides, the price of bottles has advanced considerably. Some years ago, oil of citronella was strongly adulterated with petroleum, but as this was readily detected on taking the spec. grav. (or treating with alcohol), the natives have given up the experiment.

Of the quantity exported in 1886, England received 3,623,701 oz. and the United States 2,585,136 oz.; the other countries only insignificant portions.

Oil of Coriander has been distilled in very large quantities. Its use in the manufacture of liquors [elixirs] and perfumery is constantly increasing.

Oil of Elemi is being produced in larger amount. Being yet a new article, it is not as well known as it deserves. But it will undoubtedly find large consumption in perfumery.

Oil of Citrus Species.—Heretofore only a few Italian houses had been in the habit of carrying in stock and quoting, not only pure prime oils, such as were designated "uso profumeria" (for perfumers' use), but also an inferior, adulterated grade, designated as "uso drogueria" (for druggists' use). This practice is now being imitated by others. It would appear proper to take steps looking towards an abandonment of this practice, which is calculated to injure the reputation of the drug trade in general.

Oil Lemon.—The result of the last crop in Sicily has been very favorable. The production of oil of lemon in Calabria is being extended more and more every year, a fact which will probably make itself felt in the course of time in the market price of the oil.

Oil of Mandarin Orange, as usual, is likely to be very scarce. Those who require this brand should send in their orders at once.

Oil of Bitter Orange.—Owing to the high price during recent years, greater attention has been paid to this, and the stock on hand is now sufficient for the supply. Purchasers should not be surprised over the large differences in quotation by various houses, since it is easy for the unscrupulous dealers to make a product at any desired price by mixing with oil of sweet orange (oil Portugal).

Oil Eucalyptus.—The price of oil of *Eucalyptus globulus* suffers from overproduction, one factor contributing to this being the introduction of oil distilled in California. The Australian, Californian, and African oil contain abundant quantities of eucalyptol, but the oil obtained from *Eucalyptus amygdalina* contains none at all. This oil, and that obtained from *Eucalyptus dumosa* are the only ones which have so far been put on the market from Australia, besides the oil from *E. globulus*.

A compound prepared by Dr. Schmelz, of Nizza, and termed by him *Eulyptol*, has gained some notoriety in France. It is composed of salicylic acid, 6 parts; carbolic acid, 1 part; oil of eucalyptus, 1 part. According to one reporter, the carbolic acid is said to be undistinguishable by reagents in this mixture (?). It has a strongly aromatic odor and a sharp, hot taste. It is almost insoluble in water, easily soluble in absolute alcohol, ether, and chloroform; a mixture of equal parts of alcohol and glycerin; also in water of ammonia and solutions of alkalies. As is natural from its composition, it is an antiseptic and antifermentative.

Oils of Pine-needles are being gradually introduced in this country for similar purposes for which they have long been used in Europe, that is, for ozonizing the air of sick-rooms, bed-chambers, etc., for inhalations or sprays in certain throat or lung troubles, for disinfecting in general, and the finer qualities for their refreshing, agreeable odor, when used either alone, in form of spray, or mixed with other odorous substances.

After some years' experience, it turns out that the oil distilled from the needles of Pinus Picea (silver-fir of Europe) has found the most universal and permanent favor for perfumery purposes, owing to its fine, refreshing odor. Formerly it was thought that the oil of *Pinus Pumilio* was the best, but this has an odor rather recalling that of juniper, which requires to be modified by combining the oil with other odors. Very little attention has so far been paid to the Siberian oil of pine-needles, from *Larix sibirica* Ledebour, which may be had in any quantity. This has a very strong, characteristic odor, and may be recommended for all purposes for which the oil of Pinus Picea is too expensive.

[We might add that the regular oil of pine-needles, which has been employed in medical practice for many years, is that obtained from *Pinus sylvestris*, and is quite cheap. The above-named varieties may, of course, be used for the same purposes, but some of them are rather expensive.]

(To be continued.)

Nitrite of Amyl as an Antidote in Cocaine Poisoning.—The use of nitrite of amyl as an antidote in cases of poisoning by cocaine is recommended in the *Lancet* (p. 587), for relieving the cerebral anæmia, and that of bromide of potassium and the application of cold for the convulsions, which appear to be the main cause of death in fatal cases.—*Lancet.*

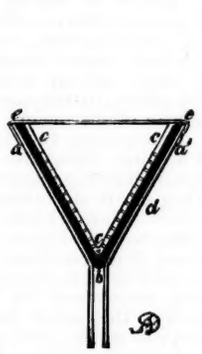
A NEW FUNNEL.

THE funnel here illustrated has the advantage that it may be used even in a dark place for filling bottles or flasks without their running over, provided only that the neck of the bottles are of such a size that the rubber ring at *a* will make a tight fit. While liquid is running into the flask from the funnel, the confined air will be able to escape only through the inner tube *dd*, at the upper end of which a whistle is attached, which will sound as long as air escapes, that is, until the flask is full. As soon as this is the case, it is only necessary to press with the thumb upon the lever *c*, when the whole tube, with its rubber attachment *b*, will be raised up so as to close the orifice of the funnel. The latter may then be lifted off, though still containing liquid, without the risk of any being spilled, and may be inserted into another flask, and so on.

ASBESTOS FILTER.

ASBESTOS is an excellent filtering medium for acids, caustic alkalies, and other liquids which exert a more or less energetic action upon the usual kinds of filters. But in its natural or crude condition it is unsuitable for use. According to Wolfgang Venerans, it is best prepared and purified in the following manner.

Rub commercial asbestos, of as pure and evenly-fibered a grade as possible, through a No. 10 sieve (that is, one having 10 meshes to the linear inch), and transfer the siftings to a finer sieve (No. 25 or 30), upon which a stream of water is made to play. At first the water will run off milky, and the washing must be continued until the water runs off clear. The asbestos is now boiled, in a porcelain or glass-vessel, during half an hour with a mixture of 1



Asbestos filter.

A new funnel.

part of strong hydrochloric acid and 4 parts of water, the mass then transferred upon a perforated platinum disk in a glass funnel, and washed with water until the washings no longer afford a reaction for hydrochloric acid. Next, it is heated in a platinum crucible or capsule over the blast-lamp, and afterwards, when moderately cool, transferred to well-stoppered glass vessels.

Asbestos prepared in this manner filters rapidly and clear. By making a magma with water and pouring it upon the perforated platinum disks or filters devised by Gooch, a very superior filtering medium is obtained.

If it is desired to make a conical asbestus filter, the method of Grundl, proposed some 20 years ago, may be adopted. A magma is made with the comminuted asbestus and water, which is poured into a suitable glass funnel, the neck of which is closed. A hollow cone, made of fine wire-gauze, is then slowly pushed into the glass funnel, so that the asbestos will gradually be compelled to form a layer between the cone, which must be somewhat smaller than the funnel, and the latter. The liquid mass which remains behind is poured out and the hollow cone carefully removed, when the filter is ready.

Another method of making conical asbestos filters is that of Karl Trobach. The asbestus is here held in place by means of a perforated plate, *c c c*, fitted into the inside. In fact, the funnel may be filled in this case precisely as in the before-mentioned method. But as the plate is intended to remain, it is made of acid-proof material. It is held in place by a clamp, *e e*, passing over the edge of a funnel.—After KRUEGER, *Die Filter.*

Composition for Removing Ink.—A newly patented composition for the removal and erasure of writing-inks from paper, cloth, and all other substances, without injury to the substance, is made as follows: To 2 quarts of water, which has been previously boiled and cooled, add 4 oz. of citric acid, and after the acid has been dissolved add 6 to 8 oz. of a saturated solution of borax and 12 oz. of chlorinated lime. Place the whole in a stoppered quart bottle, shake well occasionally in the course of several hours, then allow to settle and decant the clear liquid.

Some Common Facts in Regard to Strophanthus.*

THE strophanthus is a plant that climbs to the top of the forest trees, where it blooms and then yields two large pods about ten inches long, that grow at right angles to the stem. If not gathered soon enough they expand and liberate the seed just the size of an oat, but this seed has a shaft and a plume in form like an arrow that is blown from a tube, so that it would at once occur to the natives to be guided by the Great Spirit to the use of this seed. If allowed to burst, the seed is carried by the wind for hundreds of miles. The natives climb the trees to secure the pods before they burst, and they bind them into bands about thirty inches long with a very strong fibrous bark. This has the effect of preventing the pods expanding and the seed escaping, for then the pods would be useless, as it is at present regarded by tribes for thousands of miles as the equivalent of money, these tribes depending for their food and for attack and defense on these arrows. The natives who hold the rights in the country where the two best varieties grow, viz., the S. Kombé and S. hispidus, command the highest price, and the test for strength (when the purchaser has a doubt) consists in this that he rubs a seed on to a pointed stick and pierces the skin of a fowl. If it at once falls over, then he knows the poison is active, and he bleeds the fowl and cuts out the wound to preserve the former for food.

The seed is pounded up into an oily mass, and if too liquid it is mixed with clay, and placed just behind the barb of the arrow to make it adhere better during flight. I have found thorns tied into the shaft, and to prove how virulent this poison is, a friend loaned me some arrows to show at the Medical Congress at Brighton in 1886, and one of these thorns just pierced the finger of the gentleman who unpacked the parcel. Although he at once sucked the wound, he felt the pain go up his arm to the shoulder, but the effect passed off during the night. These arrows had been 16 years in this country.

The natives who collect ivory go out in parties, and if they can only pierce the skin of a large tusker elephant with these poisoned arrows they follow him up at some distance until he becomes, as they call it, drunk and insensible. They remain quiet for fear of disturbing him and making him run away. In a short time the poison stops the action of the heart, and he dies. They are careful how they use the meat. When hunting game for food with their poisoned arrows they get to the animal as quickly as possible and stick it, to cause a flow of blood, and they also cut out the meat near the wounded parts and bury it. They do not then suffer any ill effects from partaking of it. There is as yet no antidote discovered for this poison; the best plan is to suck the wound, but now that we are aware of the strength of this arrow poison, there need be no longer any surprise at the loss of so many valuable lives in Africa when missionaries have been trying to civilize the native tribes. I have made a collection of strophanthus plants and seeds, and have about sixteen different varieties, some coming from the East Indies, some coming from the East Coast of Africa, others from the West Coast, but those that are more intensely bitter than any come from the centre of Africa. Up to the present time no plan has been resorted to but tasting both the seed and the extract to ascertain its strength. Some systems are much more susceptible to its action than others. When stripping the seeds from the pods, the natives dig holes in the ground and bury the barb or plume from the seed, because they find it flies about and causes inflamed eyes. Some of our large druggists have men who are at once affected with pain in the side and heart if they go into the room where the tincture is being prepared. The action of examining the pods and seeds affects some people, and many experts who are in the habit of tasting nearly every drug draw a line at strophanthus. On the other hand, the workers in the laboratories when tasting the tincture soon became accustomed to it, and so far more strophanthus has passed through my hands than any one else, and I have experienced no ill effects. Naturally, I use every precaution.

Carbolate of Mercury.—Brandt, a pharmacist in Kieff, has prepared this remedy by precipitating a very dilute solution of bichloride of mercury with a concentrated alcoholic solution of carbolate of potassium. The yellowish precipitate having been frequently agitated with the liquid for 24 hours, assumed a whitish appearance and was then filtered and washed with distilled water until the wash-water showed no trace of chloride. It was then transferred to a fresh filter-paper and dried under cover. The product is nearly white, tasteless, and amorphous, scarcely soluble in cold, but readily soluble in boiling hydrochloric acid.

In doses of ¼ grain, 3 to 4 times daily, it is used by Karl Shadek, of Kieff, as a remedy in syphilis.—*Lancet.*

---

*We are indebted for the above interesting account to its author, Mr. Thomas Christy, of London, and to the *Macklisfield Advertiser*, in which it was first published.

Comparative Solubility of Pill Coatings.

A MEDICAL man having expressed his opinion that a gelatin coating was not a desirable one, because after a time the gelatin altered in composition and became horny and insoluble, Mr. Thomas Thompson placed a two-year-old pill into water at 95° Fahr., and the coating dissolved in a few seconds. The objection that the preliminary solution of gelatin by heat renders it insoluble is groundless, because the gelatin is heated in the course of manufacture, and is yet perfectly soluble. The author compared the gelatin coating of a pill with a sheet of ordinary gelatin and another sheet made from the coating solution, and found no difference in their solubility. These experiments led to the inquiry which was the basis of this communication. Samples of the various kinds of coated pills—pearl, sugar, gelatin, tolu, and keratin—were examined, also aloes and iron pills in sugar, pearl, gelatin, and tolu coating.

The plan adopted with the aloes and iron pills was to drop one each into a weak solution of red prussiate of potash at a temperature of 95° Fahr. (about the ordinary temperature of the body), stirring once, and noting which gave the blue precipitate first, the one which so behaved being considered the most soluble. The pills were afterward allowed to digest until they were completely disintegrated. In order to make the test in every way a fair one, the needle-hole in the gelatin-coated pill was closed. The following are the results:

Sugar.—Showed precipitate in six minutes. *Disintegrated* in one hour and forty minutes.

Pearl (*a*).—In twenty-three minutes, after having been kept at a temperature of 100° Fahr. for eighteen minutes. *Disintegrated* in 4½ hours.

Pearl (*b*).—Outer coating fell away after keeping at a temperature of 100° Fahr. for twenty-five minutes and showed precipitate after two hours and fifteen minutes. *Disintegrated* in five hours.

Pearl (*c*).—In three hours and fifty minutes. Did not not disintegrate after standing all night.

Tolu.—In one hour and three-quarters the precipitate was only shown at points, as if the moisture and heat had caused the pill to swell and burst the coating. *Disintegration* of fresh pills took three or four hours.

Gelatin (*a*). In one minute and a half. *Disintegrated* in thirty minutes.

Gelatin (*b*).—In four minutes. *Disintegrated* in one hour and a quarter.

The observations with the pearl-coated pill led to the belief that it has two coatings, and the time occupied for disintegration points to the conclusion that, in order to have the pills in a proper condition for pearl coating, they must be made as hard as it is possible to make them, which in the case of gelatin coating is not necessary.

The author agreed with Mr. Gilmour that chemists should not encourage the sale of factory-made pills, not only for the reasons before stated, but also for his own benefit in securing what middle profit there may be. Moreover, by buying his pills the pharmacist deprives the rising degeneration of a most important and practical part of their education, and he is unable to give that security to the public regarding the quality of his preparations which he is able to do when he makes them himself. The gelatin coating is applicable to all B.P. pills. There are some, such as pil. coloc. co., lead and opium, etc., which present a dull appearance, but with these exceptions the coating remains intact, and, unlike pearl coating, does not show any pitting or discoloration.

The keratin coating is of more recent introduction, and is made by removing from horn shavings all that is soluble in pepsin and hydrochloric acid; the residue is dissolved in solution of ammonia and evaporated until only a trace of ammonia is left. The coating is said to be insoluble in the stomach. Some keratin-coated aloes and iron pills were placed in the red prussiate solution and the blue precipitate was given in eighteen minutes, total disintegration took place in three hours; as in the tolu-coated pill, the moisture and temperature appeared to have the effect of bursting the coating and liberating the contents of the pill. From this one may almost conclude that the same action would occur when such pills are taken into the stomach.

The foregoing experiments were repeated with an acidulated solution of pepsin, and the results were practically the same.—*Chemist and Druggist.*

Cultivation of Foreign Plants in Switzerland.—The Government of the Swiss canton of Vaud are taking steps for the establishment of two or three botanical gardens on the St. Bernard, the Simplon, and in Zermatt. The Jardin Alpin of Geneva last year established a station on the Tête du Mouton at an altitude of 2,300 metres. Plants from the Pyrenees, the Himalayas, the Caucasus, Siberia, etc., are successfully cultivated at this station, and a complete laboratory for the propagation of seed and the observation of the habits of plants and the changes which they may undergo consequent upon the change of habitat will be added to the station.

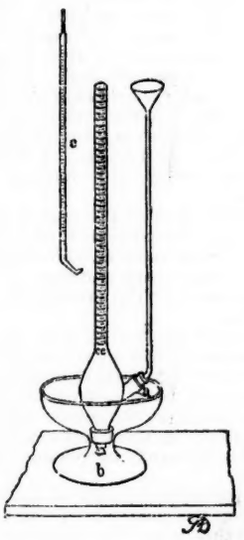
A NEW UREOMETER.

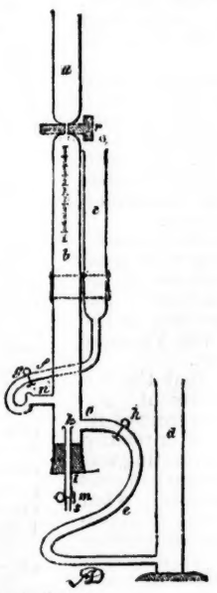
GEORGES FRUTIGER proposes the apparatus here illustrated for the assay of urea or other nitrogen compounds decomposable by means of hypobromite.

The chief portion of the apparatus is the burette *b*, consisting of two portions, the upper one, an open funnel tube, being connected with the other part by a narrow neck provided with faucet *r*. At the lower end of the burette are two lateral tubes attached, one of them, at *n*, being connected by means of rubber tubing with a separate tube *c*, adjustable in height by a feathering clamp, and the other one at *o*, similarly connected with a cylinder *d*, destined to hold a quantity of mercury. The lower orifice of the burette is closed with a rubber-cork containing the tube *k s*. At *m*, *g*, and *h*, pinch-cocks are attached.

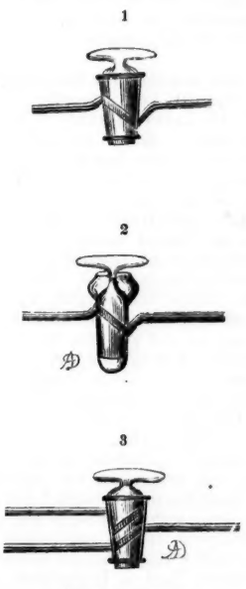
The apparatus is used in the following manner. Water is poured into *c*, and the pinchcock *g* opened so that some of the water may flow into the burette; *g* is then closed again and the cock *m* opened, to allow the excess of water to run out, care being taken that enough remains to keep the tube *k s* filled. [The subsequent entrance of mercury will certainly displace the water in this tube, unless the upper orifice at *k* is considerably contracted.—ED. AM. DRUG.] Next, the main part of the burette is filled with mercury by raising *d* (previously filled with the metal) and opening the stop-cocks *h* and *r*. When the tube *b* is completely full, and all air-bubbles or water on the surface of the mercury have been removed, 1 cubic centimeter of urine (or an equivalent amount of other nitrogenized liquid) is poured into the upper tube *a*, and allowed to enter the lower tube, the mercury cylinder *d* having previously been replaced on the table. Next some water is made to enter the burette in the same manner, and finally a sufficient quantity of the hypobromite solution (solution of bromine in caustic alkali). The nitrogenized substance, on decomposition, affords an amount of nitrogen gas, which is measured under the ordinary precautions and is found, by calculation, to correspond to a certain amount of the nitrogenized substance. [On an average, 1 C.c. of nitrogen corresponds to 0.0027 Gm. of urea.] The apparatus here described is made for sale by S. C. Pensold, of Geneva.—*Chem. Centralb.*, No. 1.

Burette nozzle.





Frutiger ureometer.



Glass stop-cocks.

IMPROVED GLASS STOP-COCKS.

IN the case of ordinary stop-cocks, it requires a revolution through nearly 180 degrees to bring about a perfect closure. At the same time, if this is often repeated, the body of the stop-cock will grind itself very gradually further in, or is apt to become leaky after a while. Messrs. Greiner and Friedrichs, of Stützerbach, Germany, have put on the market a new kind of stop-cock which is claimed to be free from these drawbacks. It is pierced in an oblique manner, and the corresponding tubes are attached at different heights. As will be seen from the cuts, it requires but a slight turn to close or open the stop-cock. When it is desired to make the latter absolutely tight, the neck into which the stopper fits is expanded in the shape of a bowl (Fig. 2), which is to be filled with mercury. Two-way cocks made on this principle are also made. One of them is shown in Fig. 3.

A NEW BURETTE NOZZLE.

MANY chemists are in the habit of closing burettes by means of a small piece of glass-rod pushed into the rubber tubing slipped over the orifice.

W. Leybold has recently published a simple method, by means of which the function of this glass-rod may be combined with the glass nozzle. It is only necessary to close the latter by fusion at its inner end, and to provide it with a small lateral hole about one centimeter below the closed end. This hole is best made by heating the tube over a finely pointed flame and blowing it out. By means of a file, it may be easily rendered smooth and even on the surface.

To know at which side the hole is situated may not be always as easy as the author states. He assumes that, when it is once inserted in the proper position, the operator will easily find the place with his finger. [We would suggest that a small pellet of glass be fused upon the exposed portion of the nozzle exactly in a line, perpendicularly, with the hole. In this way, the position of the latter would be always easily known.]—After *Zeitsch. f. Anal. Chem.*, 1887, 230.

Boring Holes Through Glass.

A WRITER in a recent number of the *Revue chronométrique* states that holes may be bored through glass by means of a rapidly rotating steel borer kept moist with turpentine "previously mixed with oxalic acid or the juice of onions." A writer in the *Zeitschrift f. Instrumentenkunde* quite properly declares these last-named additions to be immaterial. He adds: "The object may be accomplished readily by using a borer tempered at as low a temperature as possible (so as to be as hard as glass), and rotating it only slowly, taking particular care that it is kept constantly moist with oil of turpentine. Glass may also be bored quite readily with the aid of petroleum, though this does not possess the power of cooling the tool in the same degree as oil of turpentine. In order to prevent the chipping of the edges at the commencement of boring, it is preferable to make a preliminary hole with a glass-hard three-cornered steel-point. This hole should be a trifle larger than that which is to be bored through the glass. The latter may then be drilled as described before. In order to prevent the glass at the opposite side from breaking or chipping, when the borer begins to pass through, a piece of glass must be cemented against the other side."

Substitutes for Gum Arabic.

MR. CHARLES CHRISTY, some time ago, reported that recently some remarkable specimens of gums had been received from India, but up to the present time there was no gum which has come under his notice which would supersede gum arabic, at least that from the Soudan, known in commerce under the name of "Turkey sorts." This sold, before the breaking out of the Soudan war, with difficulty at 35s. to 40s. a hundredweight, but at the present moment it was worth £10 to £11 [at this time, May 15th, £15.0.—ED. AM. DR.]. What was wanted was some gum to replace it, and it seemed a very strange thing that they had not been able to find one. What was wanted was a sweet gum, which could be used medicinally as a mucilage. The gums hitherto brought forward were more or less of a bitter nature, containing a large amount of tannin, and the consequence was, when used for dyeing purposes, if the dye contained any mixture of iron, it turned black. He hoped the gentlemen visiting England from the different colonies would bear this in mind. They were getting gums from Australia, but none of them that he knew of were of the sweet character, which could be used in pharmacy. The nearest thing to it was the produce of Senegal.

Notes on Commercial Drugs and Chemicals.

(From the trade circular of Gehe & Co., of Dresden, for April, 1887.)

Aconitine.—Beside its ordinary uses, this alkaloid has been found to be an excellent remedy in syphilitic headache. Leroy observed its good effects in cases where even iodide of potassium and quinine failed to give relief.

Aluminium.—In consequence of the great reduction in price which metallic aluminium has recently experienced, its employment has very materially increased. The "Chemische Fabrik auf Actien, Berlin," has put on the market three different kinds of aluminium-bronze, viz.: No. 1., consisting of about 10 parts aluminium and 90 parts copper, having the color of pure gold; No. II., containing about 5 parts of aluminium and 95 of copper, looking like 14-carat gold; and No. III., consisting of about 2½ parts of aluminium with silicium and copper, which has the appearance of hard brass. These alloys are easily fusible, and resist the action of the atmosphere. They may be polished, are ductile, or may be rolled to any extent, and may therefore be used as additions to, or substitutes for other bronzes.

In view of the increasing use of aluminium, Gehe & Co. offer some practical hints regarding the soldering of aluminium. The solder is made by melting together 5 parts of zinc, 2 parts tin, and 1 part lead, and this alloy is rolled out to a thin sheet. The aluminium to be soldered must be scraped or rubbed clean, and then coated with paraffin or some other similar body. A piece of the soldering alloy is then placed upon both surfaces, and the place heated. The paraffin melts first; on further heating, the solder melts, and after cooling this will be found permanently united with the aluminium. The two coated surfaces are then soldered together in the usual manner. When aluminium is to be soldered together with other metals, it is only necessary to coat it first with the above alloy.

This method is based on the fact that aluminium, when exposed to the air, very rapidly becomes covered with a scarcely visible layer of oxide (alumina), which prevents further oxidation, and has caused the supposition that aluminium is not affected by exposure to air. The coating of alumina is an insurmountable barrier to the solder, which can be removed only by coating the aluminium with paraffin immediately after scraping it clean.

Amber in the finest quality, so-called "coral-fracture" (Korallenbruch), is at present obtainable only with great difficulty and at high price. The chief producers at the coast of the Baltic have made an agreement not to put this or similar qualities of amber on the market in the future, so as to cut off the supplies from the Viennese manufacturers of *artificial* large amber-pieces.

Antifebrin.—Gehe & Co. confirm the fact that the use of this antipyretic is finding extensive employment. According to the published reports of the discoverers of its antipyretic action (Drs. Cahn and Hepp), it is readily borne both by the stomach and intestines. Vomiting was never observed, nor were the kidneys or urinary organs irritated. Exanthema occurred only sporadically. What change the drug (acetanilide is the proper *chemical* appellation) undergoes in the organism is not yet sufficiently known. Yet the discoverers believe, from experiments thus far made, that it is partially decomposed into aniline and acetic acid, and that the former is the real antipyretic.

Of homologous substances, *benzanilide* ($C_6H_5NHCOC_6H_5$) has likewise antipyretic properties. The salicylanilide ($C_6H_5NHCOC_6H_4OH$), on the other hand, has only feeble power in this direction.

Antipyrin.—The consumption of this best-known of all antipyretics has somewhat diminished, owing no doubt both to the greatly reduced cost of quinine, and to the successful introduction of its new rival, antifebrin, which costs about 95% less.

[Antipyrin is made, under the patent of Dr. Knorr, only by one firm, and the price is therefore regulated without regard to competition. Antifebrin, on the other hand, stands on a different ground. In the first place, it has long been known to chemists under the name of acetanilide, and can easily be prepared by any one who wants to do so. In the second place, the name antifebrin, which has been given to it by Drs. Cahn and Hepp, is not protected as a trade-mark, so far as we know, having been proposed by the discoverers of the antipyretic effects of the drug without any restrictions or proprietary reservation. Hence there are several firms engaged in the manufacture of the article, though one of them apparently claims a sort of monopoly in the matter.—Ed. Am. Dr.]

Arbutin is in considerable demand. Gehe & Co. have been informed by competent authority that it is employed with good success in Bright's disease, being given in large doses. Reports on the subject will shortly appear in the medical press.

Atropine Santonate.—This new salt of atropine is now used in ophthalmic practice on account of the stability of its aqueous solution. The santonic acid is reported to prevent the development of fungi.

Balata.—On the subject of balata, the dried milky juice of *Mimusops globosa* Gærtner, an interesting report has been furnished by the government botanist and director of the botanical garden at Demerara, Mr. G. S. Jenman. According to this author, the habitat of the tree, which reaches an altitude of 120 feet, extends from Jamaica, Trinidad, and Venezuela to French Guiana. It is said to be particularly abundant about the river Berbice and eastwards to Dutch Guaiana, where several thousand acres of ground have recently been acquired by an American firm for the purpose of obtaining the juice of the trees. The forests are reported to be inexhaustible. Hence collectors of balata pay no attention, at present at least, to the preservation of the valuable trees, but the latter are simply hewn down or tapped without care. Only after the forests in the immediate vicinity will have been destroyed in this manner, will there be a change in this system.

Belladonna leaves have been very abundant, which is accounted for by the fact that belladonna *root* is in active demand, and searched for everywhere. One consequence of this will be that both the root (and eventually also the leaves), as well as atropine, will be less abundantly obtainable in the future.

Bismuth.—The Australian production does not appear to have affected the market so far, and has probably been only moderate.

Bismuth Subnitrate.—Gehe & Co. confirm what we have experienced and reported upon ourselves some time ago, that certain brands of subnitrate of bismuth made in Europe (we have examined only some French makes) are quite impure. This is particularly the case with the bismuth troches made in France and Italy, which Gehe & Co. have sometimes found to be adulterated with phosphate of calcium to the amount of 50%, not counting other impurities often existing in the best reputed brands.

Some time ago a demand has arisen for a "subnitrate of bismuth precipitated with nitrate of sodium." This preparation is asserted by some medical authorities to have a much more decided action than the officinal, which may be due to its extremely fine division. The microscopic appearance of this compound is entirely different from that of the officinal. A crystalline structure is visible only under a lens magnifying 400 diameters.

Cannabinon.—Since the reports of Buchwald and Pusinelli regarding symptoms of poisoning produced by a dose of 0.2 Gm. (ab. 4 grains) of this substance prepared from *cannabis indica*, the demand for it has materially declined.

Carbolic Acid.—The unusually active demand for this substance, the causes of which have long ago been made known to our readers, still continues, and is likely to bring about a temporary stoppage of the supply, as it is impossible to increase the production at will during the summer months.

Cinchona Bark.—In spite of new antipyretics, quinine and manufacturer's bark have lost nothing of their great importance. A natural result of the constant recession of the price of bark during the last ten years has been to greatly increase the consumption. This has been the case particularly in the United States, which still continue to absorb constantly increasing quantities of quinine from Europe.

The immense exports of bark from Ceylon have naturally been the cause of the constant decline in value. To realize this, it is only necessary to examine the following statistics of export of bark from Ceylon:

Oct. 1 to Sept. 30.	Pounds.	Oct. 1 to Sept. 30.	Pounds.
1876 to 1877	56,589	1881 to 1882	3,099,895
1877 to 1878	173,497	1882 to 1883	6,925,595
1878 to 1879	373,511	1883 to 1884	11,492,947
1879 to 1880	1,208,518	1884 to 1885	11,678,300
1880 to 1881	1,207,720	1885 to 1886	15,364,913

The first months of the new season appeared to show that the last figure would not be exceeded in the future, and in consequence thereof an advance was a natural sequel. But when it appeared later on that the rate of export did not show any diminution, the price declined again during March, an additional cause being the sale of 28,000 ounces of quinine at auction, in London. It is, however, reported that the plantations upon Ceylon have been reduced from 64,000 acres in 1883 to 48,000 acres in 1885, and that, therefore, the export will diminish in the future. On the other hand, Java does not appear to contract, but rather to expand its cultivation, and the same may be said of the East India barks (from the Nilgiris, Wynaad, and Darjeeling). South American barks are also again arriving in the market in larger amounts, and this will probably be the case much more in the future, as the cultivation of cinchonas in Bolivia promises to be quite successful.

Coca Leaves.—The supplies were extraordinarily large up to the winter months, when Bolivia leaves, of fine, green color, took a considerable advance. The same, though not to such an extent, took place with the Peruvian and Truxillo leaves, which are mostly purchased by manufacturers of cocaine. During the last few months, the importation of crude cocaine manufactured in Peru has assumed constantly increasing dimensions, so that it

has become already almost impossible to compete with the Peruvian manufacturers.

Cocaine.—A large quantity of the cocaine of the market is prepared from the crude alkaloid imported from South America. There is not enough profit in extracting the alkaloid from the leaves in Europe [or in the U. S.]. It is not at all improbable that an artificial substance will be discovered as a substitute for cocaine, having all its anæsthetic properties, as it is already known with certainty that cocaine is some derivative of benzoyl.

Codeine.—Contrary to the usual custom that the value of codeine rises when that of morphine declines, both of the alkaloids have lately shown a rising tendency.

The conversion of morphine into its methyl compound (or codeine) has been already effected in various manners. The best known method is that of Grimaux, who used as starting point the morphine-potassium- (or sodium-) alcoholate, treating it with iodide of methyl. Yet this process yielded only about 10 per cent of codeine, hence it was not practical. A further step was made through the synthetic investigations of Hesse, who at first regarded the artificial codeine thus produced not as identical, but only as isomeric with the natural alkaloid, though he acknowledged later on that they differed only in their rate of polarization.

Recently, codeine is made by a German manufacturer, a former attaché of the firm of Gehe & Co., by a process differing from those published. The product is absolutely pure and in handsome crystals. While Dott's process is based upon the decomposition of the morphine-alkali with chloride of methyl, the new patented process of the German manufacturer produces codeine by the action of sulpho-methylates upon alkaline solutions of morphine, and the process is also applicable to the preparation of ethyl-morphine and the higher homologues.

Gum Arabic.—The high price of genuine gum arabic appears to have reached its highest point in the beginning of this year. In the fall of 1886, the arrival of considerable quantities of Gezireh gum somewhat depressed the value, but the stocks of genuine Kordofan gum were subsequently so rapidly consumed that the price took a decided rebound. It is reported by reliable authority that considerable supplies of the genuine gum arabic have accumulated above Wadi-Halfa, in the mountains and the desert. Of course, the owners of this stock are anxious to get them to market as soon as possible, in order to benefit from the high prices ruling at present. Yet fresh supplies can scarcely be expected to arrive at Cairo inside of several months, because it will first be necessary to bring camels from many distant localities, for the purpose of resuming the interrupted trade. Besides, it is questionable whether capitalists can be found who will risk money in the hazardous undertaking.

Insect-Powder Flowers.—The Dalmatian flowers have reached an unusually high figure, chiefly owing to an active demand from the U. S. While the price at Trieste, in the beginning of last season (June, 1885), ranged between 100 and 150 florins per 100 kilos, according to quality, it is necessary now to pay 180 florins for open, 210 fl. for half-closed, and 235 fl. for genuine, wild, unexpanded flowers. On Feb. 1st, the stock had been reduced to about 29,800 kilos (against 129,600 at the same period of the preceding year), and the total quantity exported up to June, 1886, amounted to 500,400 kilos, against 465,000 in the preceding year. The Persian flowers have advanced in a similar ratio, but the supply was very limited and is almost exhausted.

Iodine.—At the beginning of the last quarter of 1886, it was rumored that the Chilenian Association of Manufacturers was about to be dissolved, since several members of it had found it necessary or to their advantage to seek a market for their products outside of the ring. It was also reported that the attempts to bring them back into the combination were unsuccessful. For this reason, the leaders of the "combine" reduced the price of iodine inside of a few weeks from 9 to 5½ pence per oz., and threatened to put it down as low as 2 pence. This threat had its effect in not only bringing back the deserters, but also in absorbing the Scandinavian producers who had previously been entirely independent of the ring.

Jaborandi leaves have been very scarce in the past season, and it is especially difficult to find leaves of good quality and of fair alkaloidal value. Future shipments will certainly fetch higher prices.

Macassar Oil.—The genuine macassar oil, from the seeds of *Schleichera trifuga*, a sapindaceous tree, native of the East Indies, possesses in its home a great reputation as an efficient agent to promote the growth of hair and to remove eczematous eruptions from the skin. At one time the genuine oil was imported into Europe, but this gradually ceased, in consequence of other products being put upon the market as macassar oil, such as cocoanut oil, perfumed with the flowers of ylang (*Cananga odorata*) or of champa (*Michelia Champaca*), or compounds made in Europe, and consisting of domestic fatty oils, mixed with volatile aromatic oils and colored with alkanet. Gehe & Co. state that they have received a fresh supply of the genuine oil. This is semi-liquid at the ordinary temperature, has a yellowish-white color and a faint odor of oil of bitter almonds. It contains about 0.05 per cent of hydrocyanic acid, and possibly this may be the constituent upon which its favorable dermatic effect is based.

Mollin.—Under this name a new kind of soap, as a vehicle for the application of dermatologic remedies, has been introduced. It is a soft soap containing an excess of about 15 per cent of fat, and 30 per cent of glycerin. It has a dull white color, a homogeneous consistence, and may be easily and evenly distributed upon the skin. When rubbed with mercury the resulting ointment is said to have advantages over the ordinary mercurial ointment as it may be readily washed of with water. Besides, it is said to have a more intense effect. [We have mentioned this body already in a previous issue, but quote the above remarks as we have had inquiries about it.]

Musk.—The total amount exported from Shanghai in 1886 was 2,279 catties. Though this figure does not show a diminution of supply, it is, however, known from other facts that the musk deer is becoming more scarce every year, and its total extinction appears to be only a question of time.

Naphtol (Beta).—The demand for this body is constantly increasing. The closely allied carbonaphtolic acids (oxynaphtolic acids) are being tested for their serviceability, and may possibly find employment in form of salts of alkalies. The sodium salt is reported to possess a decided antiseptic action.

Opium.—The market value of Smyrna opium has suffered a great change since the end of the last harvest. At that time, a crop of about 9,000 chests was expected, and in consequence thereof, the price has been depressed lower than had ever been known before. But when the crop of the season began to arrive at Smyrna, and it was seen to be far below the expected amount, an advance took place, which at first proceeded slowly, but soon made rapid progress. Besides, unfavorable reports were sent from the interior during January and later. In the beginning of February Yerli was rated at 105, and shortly afterwards at 115 piasters, and when the drought continued, even in March, and became so threatening that public prayers for rain were ordered to be held, and a famine was threatening, the price rose as high as 140 piasters. It is supposed that, under the most favorable circumstances (that is, if it is still possible to renew the sowing in the spring), there will only be a quarter-harvest this year. And as the crop of 1886 amounted to only 7,300 instead of the expected 9,000 chests, it is evident that no decline can be expected.

Peptone has recently been administered by way of suppositories. For this purpose a peptone free from salt appears to be preferable, as being less liable to irritate.

Picric Acid is in strong demand, particularly for the French Government, not only for the purpose of the new explosive, melinite, but also as an ingredient of a new kind of gunpowder for fire-arms.

Quinine Sulphate.—Gehe & Co. make some comments on the oxalate test for the purity of commercial sulphate of quinine, as they suppose that this test is likely to receive the indorsement of the permanent Pharmacopœia Commission. Sulphate of quinine, with 13 per cent of water, contains 77.44% of pure alkaloid; with 14% of water, 76.6% of alkaloid. If the sulphate of quinine is to be converted into oxalate, it is necessary to use such a quantity of oxalate of potassium as will afford enough oxalic acid to the quinine for the formation of oxalate of quinine. The last-named salt, when dry, contains 13.9% of oxalic acid (Regnault, *Rep.*, 52, 403). Hence, 2 grammes of sulphate of quinine containing 77.44% of alkaloid require $107.6 \times 2 = 215.2$ milligrammes (0.2152 Gm.) of oxalic acid, and if the sulphate contains 76.6% quinine, it will require 213 milligrammes of the acid. Assuming, in the most favorable case, that oxalate of potassium contains 1 molecule of water, this salt contains 39.05% of oxalic acid (Graham, *Ann. de Pharm.*, 29, 2), and in 0.5 grammes, 0.195 Gm. of oxalic acid. Consequently, if only the theoretically calculated quantity of oxalate of potassium were added to the quinine salt, it might happen—particularly if the oxalate of potassium contained more than 1 mol. of water, that a small fraction of the sulphate of quinine remains in solution undecomposed. It follows, therefore, that the quantity of oxalate of potassium will have to be increased. And there seems to be no objection to this, since oxalate of quinine is almost insoluble in a 15-per-cent solution of the oxalate of potassium.

Saccharin—among other things, also the bugbear and nightmare of the sugar manufacturers who have been led to believe that it will interfere with the production of cane sugar— will shortly make its appearance on the market. So far as its *medicinal* uses are concerned, it will be employed in diabetes, polysarcia, and affections of the stomach, intestines, and bladder, when the use of sugar would be objectionable. Also as a corrigent of the bitter taste of alkaloids, etc. According to Fahlberg and List, it has the following solubilities (we have calculated their figures so as to show the quantity of solvent required to dissolve 1 part of saccharin):

1 part of saccharin is soluble in:
(fractions being omitted.)

Water	333 parts.	Alcohol 60%	35 parts.
Alcohol 10%	185 "	" 70%	32 "
" 20%	135 "	" 80%	31 "
" 30%	88 "	" 90%	32 "
" 40%	50 "	" 100%	33 "
" 50%	36 "		

The solubility of saccharin may be increased at will by the addition of carbonates of alkalies or alkaline earths. For every five parts of saccharin 2 parts of carbonate of sodium may be used.

Senna.—Though the so-called Alexandrian senna reached Cairo, by way of Assuan, in satisfactory quantities, yet its quality was mostly below the standard. Genuine Senaar senna will remain inaccessible until after the re-opening of the trade with the Soudan.

Salicylic Acid.—The old question whether salicylic acid is injurious to man, when taken internally as a constituent of articles of food or drink to which it had been added for the purpose of preservation, appears to be as far from final decision as ever. Some authorities declare it poisonous even in comparatively small doses; others assert that it has been, and may be taken in doses of as much as ½ gramme per day, for many months, without producing any untoward effects. Nevertheless, a commission of Bavarian sanitary experts some time ago reported against its use, and accordingly its employment as a preservative of food or drink has been forbidden in Bavaria. And a similar commission, appointed by the Paris Académie de Médecine, has made a report, in which the same conclusions are arrived at. Whether this will be followed by an interdict of salicylic acid is not yet known. But brewers, as well as vintners, have made energetic protests against any action in this direction, claiming that the matter has not yet been sufficiently studied. The export of salicylic acid from Germany amounted to 158,600 kilos in 1886 against 128,600 in 1885.

Santonin.—During the past year, the factory at Tschimkent (Turkestan) produced 40,000 kilos of this proximate principle.

Thalline.—In addition to the use of this substance as an efficient antipyretic, it has begun to be used with success as a remedy in gonorrhea, a 2-per-cent solution of the sulphate or tartrate being used as injection, or it is applied, mixed with butter of cacao, in form of bougies.

Casein as an Emulsive Agent.

AT a recent meeting of the Paris Pharmaceutical Society, Mr. Léger read a paper on the use of casein as an emulsifier. He says:

Having reviewed the different substances employed in pharmacy for forming emulsions, such as gum arabic, gum tragacanth, yolk of egg, tincture of quillaja, etc., and pointed out their faults, which all pharmacists knew, he said the idea struck him to try some albuminoid substance in their stead, since natural emulsions are made with bodies of this character. In milk, the model of emulsions, butter is kept in suspension by casein. Then why not try to separate out the butter and obtain the casein of the milk in a soluble condition, and then see what sort of emulsion will result? The first step, the elimination of the fatty substance, is best performed by means of ammonia, as has been demonstrated by another member of the Society. The separation is not so perfect as when such a solvent as ether is employed; but it is sufficient for practical purposes, and more convenient with large quantities of liquid. M. Léger takes 4 liters of milk and 60 grammes of ammonia (say 1 gallon of milk and 2½ oz. ammonia), and after shaking well sets the liquor aside for 24 hours. Two layers are now observed, the semi-saponified butter above and the lacto-serum below. The lower liquid is drawn off, and casein is precipitated from it by acetic acid. The magma is collected and strongly pressed to drive off moisture; now add by trituration 10 grammes of bicarbonate of soda, and, finally, mix in enough sugar to obtain a powder representing when dry about 10 per cent of its weight of casein. The preparation keeps well in securely corked bottles during three years at least, according to experiments made so far. It has a slight, not unpleasant smell, which is not appreciable in preparations.

Now, as to the way to use it, M. Léger divides substances to be emulsified into two classes, that is (1), those soluble in alcohol, and (2) those insoluble. The first class, which includes resins, balsams, oleoresins, etc., can be worked very simply in the bottle itself. The product is first weighed or measured into the vial, and enough alcohol is added to dissolve it. Then for a 4-oz. mixture about 10 grammes (2½ drachms) of saccharated casein, dissolved in equal weight of water, is added and thoroughly shaken, after which the remaining water, etc., are gradually introduced, with continual shaking. With class (2), that is ordinary oils, a mortar is needed. The manipulation is to follow exactly the directions of the Codex in the article "Emulsions," only substituting for gum-arabic an equal weight of saccharated casein.

The emulsions thus formed are more perfect and more stable than those obtained with any other emulsive agent. But their greatest merit, M. Léger claims, is that they are more palatable, and more easily supported by the stomach. Castor oil, for instance, which to children has to be administered in the liquid state, since they cannot take capsules, he found in his experience to be readily accepted and retained by the most delicate stomachs. The same patients could not retain the oil emulsified with gum-arabic or tragacanth.—*Chem. and Drugg.*, May 7th.

Fallacies of Filtration.

THE average householder is sensitive upon the subject of his filter. He has paid a heavy price for the word "patented" stamped upon it, and the limpid stream which trickles from it is to him a sufficient refutation of all aspersions upon its efficiency. If he changes the filtering material once annually, the whole duty of man has been accomplished. It is only when the trickling stream dwindles down to an hourly drop that any doubts arise as to the fidelity of the trusted utensil.

What has preceded this clogging? A filter arrests a large proportion of the particulate matters in water, and in ways that are obvious. Among such matters are bacteria—chiefly represented by the ordinary almost omnipresent *water bacteria*, which are practically harmless as constituents of drinking water, unless they remain there under conditions favorable to the development of those products of decomposition intermediate between proteid matter and its ultimate dissolution. In addition, and held in the pores of the filter by some means not fully understood, there is present a portion of the soluble albuminoids of the water; here, then, we have congregated both the microörganisms and their culture medium; and, given a reasonable degree of temperature, here are the conditions requisite for introducing into the filtered domestic water supply the complete series of soluble products of albuminoid decomposition. Not only is this the case, but, after the first few days of use, the completeness of the removal and retention of the bacteria is diminished, and the results of the proliferation of these organisms are manifest in their numerical increase in the filtered as compared with the unfiltered water. This is well shown in a series of experiments with different filters, by Dr. G. T. Swarts, reported to the Rhode Island Medical Society, and recorded in *The Boston Medical and Surgical Journal* of March 24th, 1887.

His results show that some filters when first used successfully remove a certain proportion of organisms from the water. Other tests made seventeen days later showed in every case a marked increase in the number of colonies in the filtered as compared with unfiltered water. For instance, the unfiltered water contained thirty-six colonies of growth, while the filtered water showed the presence of colonies to the number of 2,000, 9,000, and 10,000. An examination on the seventieth day showed an increase in case of one filter, of 117,000 colonies.

Another series of experiments was made to determine how far the consumer could cleanse his filter or sterilize it in some simple manner. The results showed, however, that even with every possible precaution, the number of organisms in filtered water exceeded the number in unfiltered by several thousands.

These investigations show conclusively that the organic matter retained in the meshes or interstices of the filtering media contains organisms which increase rapidly while the filter is or is not in use, and especially if its position is in a warm kitchen or in proximity to a hot-water pipe.

The question of what would happen if a few stray germs of typhoid or cholera should enter this ready-made culture bed, and sojourn there until, reinforced by their progeny, they enter the organism of the unsuspecting prohibitionist, one hundred thousand strong, is unpleasantly suggestive.—*Med. News.*

The School of Pharmacy of Cornell University.—In the "Cornell University Register" for 1886–87, various interesting particulars are given concerning the new school of pharmacy, which is to be opened to students at the beginning of the autumn term of the current year. The course is to be extended over two full college years, and is to include, besides the branches usually taught in colleges of pharmacy, laboratory work in analytical and pharmaceutical chemistry, toxicology, and microscopical botany. Candidates for admission must be eighteen years of age, and must pass the regular English examinations, besides an examination in German or Latin. Those who fail in German may be admitted provisionally, being required to pursue the study of that language in addition to the regular work of the course. Those who have been engaged in the business of pharmacy for two years may be admitted as special students (not as candidates for a degree) without examination.

A New Specific for Diabetes, introduced by Dr. Martineau, on the recommendation of Dr. Rouget, consists of arsenicated lithia water, prepared as follows:

In the upper part of a Briet apparatus of one liter for making aërated water are to be introduced 20 Cg. of carbonate of lithium, and a tablespoonful of the following solution: Arseniate of sodium, 20 Cg.; distilled water, 500 Gm. This water to be drunk at meals with wine, and the contents of the recipient to last for three meals.

Naphthalin, in daily dose of 1½ grammes, is said to render offensive urine sweet and clear when the abnormal condition is dependent upon disease of the urinary passages, such as pyelonephritis, cystitis, etc. It causes no disturbance of digestion, and does not increase the frequency of micturition.

The Manufacture of Santonin.

MR. L. KNAPP, the manager of the Tschimkent Santonin factory, publishes some interesting particulars of the manufacture of santonin in the *Journal für Practische Chemie*. From his account it appears that the crude material, consisting of the dried unexpanded flower-heads of the Artemisia maritima, a shrub growing abundantly on the saline soil of Central Asia, and of which santonin is the active principle, is made into a paste with milk of lime, about 58 lbs. of the latter being taken to 128 lbs. of the flowers. The paste is next diluted with water, mixed with wood shavings, and ground, the heat generated during the latter process being sufficient to dry the compound. The lime converts such constituent bodies as are easily soluble in alcohol into calcium compounds, and the santonin into a very soluble calcium salt: $2C_{15}H_{18}O_3 + Ca(OH)_2 = Ca(C_{15}H_{19}O_4)_2$. The ground product is well cooled, and digested with a large quantity of alcohol at 65° to 70°. The liquid is then freed from alcohol, and neutralized at 70° with hydrochloric acid, by which process the calcium santoninate is precipitated. In about three to five days the crude santonin crystallizes out, the liquor is run off, and the crystals washed with cold water on a filter. The liquid employed averages 160 liters per 100 kilos of seed. The impure santonin is decolorized with purified animal charcoal. The average yield of pure santonin at the Tschimkent works is 1.9 per cent of the crude material, but it would be possible under certain circumstances to obtain 2.12 per cent. The loss probably occurs through the absorbing action of the charcoal.

During the process of neutralization with hydrochloric acid, a large amount of resin is separated, which adversely affects the value of the product. The resin occurs partly as a sediment and partly floating on the surface of the liquid; but particles of the latter are again precipitated by adhering to the santonin crystals which sink. A specimen of the sediment after having been digested with a hot solution of soda in order to recover part of the santonin was found to still contain about 70 per cent of crude santonin. Santonin becomes resinous by heating it with hydrochloric acid; it is not, as has been stated by Kosmann, a glucoside, for it is capable of sublimation, a property not possessed by glucosides. Santonin treated in alcohol with alkaline hydrates yields salts more or less soluble, while, on the other hand, with heavy metallic oxides it only unites under special circumstances, and even then in a very loose manner, decomposing on heating. Santonin resin is a combination of various decomposition products of santonin; but it is not obtained from santonin by drying, as was formerly believed to be the case. It is impossible to separate the santonin and the resin by means of solvents, but Mr. Knapp discovered an excellent separating agent in salts of lead or iron, preferably the former. These salts precipitated the resin, to the alcoholic solution of which is added a slight excess of acetate of lead, the mixture digested for a considerable time, and filtered at 60° to 70°. The lead residue has to be removed from the filtrate order to secure the proper crystallization of the santonin. The lead is precipitated by soda, and the santonin liberated by the addition of hydrochloric acid to the santoninate of soda. It is not advisable to treat the liquor from the diffuser directly with acetate of lead, as the former contains coloring materials which are not precipitated by hydrochloric acid, but separate at a subsequent stage of the process, and cause the crude santonin to become impure. The by-product, or exhausted crude material, is said to be utilized for fuel, or partly made into bricks for building purposes.—*Chem. and Drugg.*

A Plant which Destroys the Taste for Sweets.

A PLANT named *Gymnema sylvestre* R. Br. is a native of India. After two or three leaves have been chewed, the sense of taste is not for some time capable of distinguishing sweet flavors. The plant is asclepiadaceous, growing on the Deccan peninsula, from Concan to Travancore, in Assam, and on the Coromandel coast as well as on the African continent. It is mentioned in Dr. Dymock's "Materia Medica of Western India," and the powdered root has long been used by Hindus as a local application for snake-bites, as well as internally, in form of decoction, in similar cases. For 1 to 2 hours after chewing the leaves, coarsely powdered sugar has no more flavor than sand or, at most, only a saltish taste. So, too, bitters lose their flavor and sulphate of quinine tastes like so much chalk.

Alcohol and water are capable of dissolving the active principle of the leaves. The ether extract consists of cholorophyll and two resins, separated by their different solubility in alcohol, the one insoluble in spirits forming the larger portion. The latter is soluble in chloroform, carbon disulphide, and benzin, and is elastic and tenacious. It seems to consist of a neutral resin. The resin which is soluble in spirit is readily saponifiable with soda, and gives a permanent bluish-green color with sulphuric acid. Both resins are acrid and leave a tingling sensation in the throat when swallowed. Gymnenic acid, as separated, found by David Hooper, forms more than 6% of the leaves, in combination with a base which has yet not been isolated.—*Nature.*

The Chemical Constitution of Cocaine.

As the chemical relation of cocaine to ecgonine is already known, the attention of several investigators has been drawn to the chemical nature of ecgonine, with a view of ascertaining how its molecule is built up, and with what other organic compounds it is related. Some time ago, C. E. Merck succeeded in converting hydrochlorate of ecgonine partially into a new basic compound which could, however, not be obtained entirely pure. Yet he succeeded in preparing from it its pure compound with gold. The new base found proved to differ from ecgonine merely by the separation of water. As Merck's method of preparation is imperfect, and Alfred Einhorn had already discovered a better one, at the time when Merck's paper was published, Einhorn considered himself justified in publishing his own results (*Ber. d. Deutch. Chem. Ges.*, 1887, 1221).

This "anhydro-ecgonine" has at present merely a scientific interest, and we shall therefore only give its mode of preparation in outline.

20 Gm. of hydrochlorate of ecgonine are boiled for 2 hours, under an upright condenser, with 100 Gm. of oxychloride of phosphorus. This causes the gradual solution of the hydrochlorate. After the reaction is over, the liquid is poured into water to separate the excess of the oxychloride. When the liquid has cooled (the pouring into the water generates much heat), a solution of iodine in hydriodic acid is added, which causes the "anhydro-ecgonine" to separate as a brownish-violet precipitate. This separation is as complete, according to the author, as that of barium by sulphuric acid. The periodide is filtered off, washed with water, and the crude product, suspended in water, distilled by the aid of steam. This causes the gradual formation of hydriodate of anhydro-ecgonine and of free iodine, which latter is gradually dissipated. The hydriodate is allowed to crystallize, and purified by recrystallization.

From further results obtained by the author, which cannot be summarized to advantage here, it is certain that the new base contains an acrylic acid rest. Merck's investigations have shown that both the new base and ecgonine itself contain a methyl-group united with the nitrogen; consequently, the new base, anhydro-ecgonine, is to be regarded as tetrahydropyridylacrylic acid, with methyl at the nitrogen. Ecgonine is then nothing else but methyltetrahydropyridyl-β-oxypropionic acid, and *cocaine* is the benzoylated methylic ether of ecgonine, that is, *methyl-tetrahydropyridyl-beta-benzoyl-oxypropionate of methylic ether.* The constitution of these compounds may be expressed by the following formulæ:

$C_5H_4N(CH_3)H_3.CH.CH.COOH$, anhydro-ecgonine.

$C_5H_4N(CH_3).H_3.CHOH.CH_2.COOH$, ecgonine.

$C_5H_4N(CH_3)H_3.CHO(OCC_6H_5).CH_2.COOCH_3$, cocaine.

The problem of the synthetic preparation of cocaine has, however, not yet been quite solved. But it is evident that this will be accomplished in a short time.

Distinction of Castor Oil from other Fats.

DR. FINKENER reports the results of some experiments on the distinction of castor-oil from other oils, in the *Chem. Zeit.*

The experiments were carried out with the object of finding a suitable method for customs purposes. A 100 C.c. glass cylinder of 25 mm. diameter is provided with a 10 and 60 C.c. mark (measured from the bottom). The oil is run in to the 10 C.c. mark, and the tube is then filled up to the 60 mark with alcohol (0.829 sp. gr.). Absolute alcohol cannot be employed, but at 17.5° C. alcohol of 0.829 sp. gr. dissolves castor-oil in almost every proportion, the other oils only slightly. The tube is closed, well shaken, and the mixture examined after standing two or three minutes. Pure castor-oil gives a clear solution. But with 10 per cent of other oils (olive, sesame, linseed, cotton-seed, rape-seed oils) a turbidity is obtained at the average temperature, which does not disappear even above 20° C. Another test tried was the following: On treating pure castor-oil with sulphuric acid, a product (a sulpho-acid) is obtained which gives an almost perfectly clear solution with 40 times the quantity of water. On treating other fatty oils (such as sesame or olive oil) similarly, very milky precipitates are obtained. The latter method is, however, not reliable, as mixtures of 80 per cent of castor-oil or 20 per cent of olive or sesame oil, treated similarly, also give almost perfectly clear solutions.—After *The Analyst.*

The Poisonous Nature of Colchicin.—Colchicin acts as an irritant poison, affecting all the organs, but especially the digestive canal and the kidneys. The minimum fatal dose of colchicin for dogs and cats is 0.000571 Gm. per kilo of the weight of the animal if introduced hypodermically, but 0.000125 Gm. per kilo if introduced into the stomach. Colchicin is eliminated by different channels, but this process is slow, whence slight but repeated doses, 0.00016 Gm. per kilo, may prove fatal in five days.—*Compt. Rend.* and *Chem. News.*

THE

American Druggist

AN ILLUSTRATED MONTHLY JOURNAL

OF

Pharmacy, Chemistry, and Materia Medica.

VOL. XVI., NO. 6. WHOLE NO. 156.

FREDERICK A. CASTLE, M.D. ..... EDITOR.
CHARLES RICE, PH.D. ..... ASSOCIATE EDITOR.

PUBLISHED BY

WM. WOOD & CO., 56 & 58 Lafayette Place, N. Y.

SUBSCRIPTION PRICE per year, - - - - - - - $1.50
SINGLE COPIES, - - - - - - - - - - .15

Address all communications relating to the business of the AMERICAN DRUGGIST, such as subscriptions, advertisements, change of Post-Office address, etc., to WILLIAM WOOD & Co., 56 and 58 Lafayette Place, New York City, to whose order all postal money orders and checks should be made payable. Communications intended for the Editor should be addressed in care of the Publishers.

The AMERICAN DRUGGIST is issued in the latter part of each month, dated for the month ahead. Changes of advertisements should reach us before the 10th. New advertisements can occasionally be inserted after the 18th.

REGULAR ADVERTISEMENTS according to size, location, and time. Special rates on application.

EDITORIAL.

THE efforts which have been made to establish a pharmaceutical college in connection with Tulane University, in New Orleans, are reported to give promise of successful results, and a committee of the Louisiana Pharmaceutical Association expressed the belief that Louisiana will soon have one of the best schools of pharmacy in the country.

IT is reported that the opposition to the enactment of a pharmacy law in Louisiana during the recent session of the legislature came largely from pharmacists in country districts. This opposition was so strong as to lead to the belief that there is no reasonable expectation of its being overcome in the immediate future.

WHY do our friends who are instrumental in the organization of State pharmaceutical associations find it advisable to insert the word "State" in the title, when the use of the name of the State is quite sufficient to indicate the scope of the society in most instances? For example: The Massachusetts Pharmaceutical Association would certainly be long enough by itself without the interpolation of a word of five letters which in its use illustrates a form of tautology and is quite uncalled for. In the case of New York the insertion of the word State became necessary, owing to the existence of a city of the same name.

IT might be a paying venture for apothecaries to manufacture the apparatus recommended by Dr. Morel for administering gaseous enemata for the treatment of phthisis. The results of its use in the neighborhood of Philadelphia have been so good that there is just now a lively demand for the apparatus. Indeed, there seems to us no reason why the carbonic acid generator used for carbonating beverages may not be employed to fill the india-rubber bags which could then be sent to the house of the consumer morning and night, as wanted, the empty bag being returned. This would avoid the extemporaneous preparation of the gas and the liability to accidents from spilling oil of vitriol, breakage, etc. A rental could be charged for the rubber reservoirs, or they might be sold at once to the patient.

FLORIDA PHARMACISTS are invited to meet in the Jacksonville Board of Trade Rooms, at noon on Wednesday, June 8th, to take part in the organization of a State Pharmaceutical Association. A preliminary meeting was held on May 12th by Jacksonville druggists, of which W. A. Dell was chairman, and J. M. Farlin, secretary, and a committee on subscriptions and entertainments was chosen, consisting of Messrs. Dale, Canora, Ward, and Melter. Nearly $100 was subscribed at once. Arrangements will be made for transportation and hotel accommodation at special rates, and those who desire to be present will find it for their interests to communicate at once with Mr. Farlie.

IT is said that the influence of wholesale houses in Indianapolis secured the defeat of the Indiana Pharmacy Bill.

IT is proposed to hold an International Chemical Exhibition in Germany.

THE next International Pharmaceutical Congress will be held in Switzerland in 1893.

A NOTE from Dr. J. A. Miller, of Harrisburg, Secretary of the Pennsylvania Pharmaceutical Association, received just before going to press, informs us that the Governor has signed the Pharmacy Bill and that it has now become a law.

Dr. Miller also informs us that the Tenth Annual Meeting of the State Pharmaceutical Association, commencing on the 14th inst., will be held in the Philadelphia College of Pharmacy (by the courtesy of the members of the College), and that the cost of hotel accommodations will be: Washington House, $2.00; Girard House, $3.00; Continental, $2.50 to $3.00; Irving, $2.00; Brigham House, $2.50 per day.

Excursion tickets to the place of meeting, good for one week, can be purchased at the rate of two (2) cents per mile, at any office of the Reading Railroad, Pennsylvania Railroad, and their branches, by presenting an order which can be had upon application to the Secretary.

All the members of the Association are urged to be present at the meeting, and to bring ladies, for whom social entertainments will be arranged.

South Dakota Board of Pharmacy.—At the organization of the Board in Woonsocket, on May 17th, H. L. Warne, of Mitchell, was elected president, and J. L. Kreychie, of Iroquis, secretary. Applications for blanks for registration should be addressed to the secretary. The board will next meet in Huron on June 28th, at 9 A.M., for the examination of candidates and the issuing of certificates to those legally entitled thereto. The law applies to all practising pharmacy in Dakota south of the VII. standard parallel and all who are unprovided with certificates after the lapse of 90 days from the enactment of the law will be liable to a fine of $50.

The Minnesota Pharmaceutical Association, at its meeting on the 14th and 15th of June, will convene in Turner Hall, at 10 A.M., where the exhibition will also be held. So far as completed, the programme provides for addresses by the mayor and by the president in the morning of the 14th; election of members and officers, official reports and papers in the afternoon; and in the evening a concert, gymnastic exhibitions, and speeches.

The morning of the 15th will be devoted to the report by the Board of Pharmacy and miscellaneous business; the afternoon in sight-seeing, and the evening to a reception at the house of Mayor Weschcke. Charles L. Roos is the Local Secretary.

The Louisiana Pharmaceutical Association met in New Orleans on the 13th of April in Tulane University, under the presidence of Mr. Oscar Robin. The association has one hundred and thirty active members on its roll, and a balance of $650 in its treasury. The officers and committees for the ensuing year are: C. S. Keppler, president; W. Carson and F. C. Godbold, vice-presidents; L. F. Chalin, recording secretary; Mrs. E. Rudolph, corresponding secretary; J. B. Lavigne, treasurer. To serve on executive committee: Messrs. J. T. Thibodeare, J. J. Mellon, J. Johnson, A. K. Finlay, and W. Graner. Delegates to A. P. A., A. K. Finlay, F. C. Godbold, R. N. Girling, W. Bogel, and W. Graner. Trade Interests: L. Lyons, W. T. Cluverius, and S. Hiratt. Pharmacy and Queries: B. Tuma, S. W. Richardson, and L. L. Abbott. Adulterations and Deterioration of Drugs: R. N. Girling, F. Lascar, and J. Johnson. Legislation: J. J. Mellon, A. K. Finlay, W. Graner, E. Brand, and J. T. Thibodeau. Exhibits: C. K. Hall, E. May, J. N. A. Otto, and E. J. Wunderlich. Entertainment: W. M. Levy, J. B. Lavigne, J. Johnson, W. Bogel, and L. M. Lyons. The following papers were read: Mr. Keppler, on "Indigenous Medicinal Plants;" J. J. Johnson, on "Tobacco;" Mr. C. L. Keppler, on "Gelsemium Sempervirens;" and a volunteer paper on "Syrup of Soluble Oxide of Iron."

Mr. E. J. Hart offered a prize of $25.00 for the best preparation of drugs exhibited at the next meeting, which will occur on the second Wednesday of April, 1888.

The Albany Pharmaceutical Association, April 14th, elected the following officers: F. J. Smith, president; C. E. Lloyd, vice-president; Joseph Bandorf, treasurer; George R. Cardwell, secretary; Charles van Loon, J. H. Miller, A. B. Huested, G. E. Ferguson, W. W. Macomber, executive committee.

The Nebraska Pharmaceutical Association met at Omaha on May 10th, several hundred people being present in Exposition Hall at the opening of the session at 3 P.M. Mr. James Reed, the president, introduced Mr. H. I. Clarke, who welcomed the association to the city and congratulated it upon its prosperity and its large membership (over 500). Mr. W. C. Lane responded, and the executive committee reported 115 applications for membership.

The president, in addressing the association, referred to the recent enactment of a pharmacy law, and to the services rendered by several persons connected with the legislative work, and announced the membership of the Board of Pharmacy organized on May 7th in Lincoln: Messrs. W. C. Lane of Lincoln; Henry D. Boydan of Grand Isle; Max Becht of Omaha; A. F. Steritz of North Platte, and Henry Cook of Red Cloud. The president next referred to a number of matters connected with the business of pharmacy, and suggested the establishment of life memberships and the patronage of pharmaceutical journals. Acting in his official capacity, he had appointed Mr. N. A. Kuhn, of Omaha, to represent the association in the preparation of a National Formulary. He recommended that the secretary should be made a permanent officer, and that avoidable expenses should be cut down.

The secretary reported receipts (with balance) amounting to $424, the expenditure of $652.97, and unpaid dues aggregating $710.

Dr. J. R. Brown, of Lavenworth, addressed the meeting on the subject of "Pharmaceutical Education;" Mr. Henry D. Boydon on "The General Quality of the Pressed Herbs of the Market;" Dr. O. A. Wall on "Percolation."

The salary of the secretary was increased to $100, and Lincoln was selected for the next meeting, to be held May 3d, 1888.

The association voted to recommend that the Board of Pharmacy recognize diplomas of reputable schools of pharmacy requiring a four years' course of study, but not the certificates of other State Boards.

The following officers and committees were chosen: President, M. E. Schultz; vice-presidents, C. H. Bruner, P. C. Corrigan, W. B. Shryock, W. P. Haller, W. P. Hughes; secretary, C. J. Daubach; local secretary, W. C. Lane; treasurer, J. Forsyth; chairman of committee for A. P. A., and N. R. D. A., N. A. Kuhn.

Ohio Pharmaceutical Association.—The ninth annual meeting will be held at Akron in the council chamber, commencing at 11 A.M., Wednesday, June 8th, 1887. On account of easy access by rail from all parts of the State, the attendance will be large, and the exhibition of drugs, chemicals, etc., from present indications, will surpass all held heretofore. Every druggist in the State is cordially invited to participate in our deliberations, whether he is a member or not. Some may think that, as we now have a pharmacy law, their presence is not required at the meeting. This is a great mistake, for at this meeting business will come up that, to the druggist, is of just as much importance as the pharmacy law question was. By not attending this meeting, you will miss a rare treat, which is in store for you in the way of an entertainment. If you cannot attend, show your approval of the objects of the association by joining it in membership. Application blanks can be obtained from any member or from the secretary. Also bear in mind that reduced *railroad* rates from all points in the State are to be had by applying to the secretary for a certificate. LEWIS C. HOPP,
Secretary.

St. Louis College of Pharmacy.—At the twenty-second annual meeting, held April 25th, the election of officers for the ensuing year resulted as follows: President, C. F. G. Meyer; vice-president, Louis Shurk; recording secretary, G. H. Chas. Klie; corresponding secretary, H. M. Whelpley; treasurer, Solomon Boehm. Three trustees, to serve for a term of two years, were elected as follows: F. W. Sennewald, Julius E. Koch, and H. E. Hoelke. The three trustees holding over are Geo. H. Ude, Dr. E. Ahl-Brandt, and A. P. Kaltwasser.

Thomas Christy & Co., of London, Eng., inform us that they have removed to more spacious and convenient premises, at 25 Lime street, E. C., where communications should now be addressed. They now have a show-room for specimens of rare and new drugs; a manufacturing department, and ample accommodations for storage of products, etc.

Mr. Theodore Metcalfe, of Boston, who for over fifty years has been in business at No. 39 Tremont street, and steadily increased an enviable reputation as a pharmacist, was lately the recipient of a very complimentary dinner from his friends. Among the many distinguished persons present was Dr. Oliver Wendell Holmes, who gave an amusing account of his early acquaintance with Mr. Metcalfe. In the course of his remarks he hinted at the relations existing between them and the undertaker across the way, which may have had something to do with Dr. Holmes' early retirement from practice.

Illinois Pharmaceutical Association.

EDITOR AMERICAN DRUGGIST:—The date of meeting of the Ill. S. P. A. has been changed from June 14th to August 23d, when it will convene at Decatur. Mr. Henry Smith has been appointed local Secretary, vice W. C. Armstrong resigned.

All statements of change are in error; this is first *official* notice given.

Fraternally,
L. C. HOGAN, Sec'y.

ENGLEWOOD, ILL., May 26th, 1887.

The California Pharmacy Law has failed to be enacted.

The Missouri Pharmaceutical Association will meet at Luret Springs on the 28th instead of the 21st of June.

Exports of Cinchona bark from Ceylon in 1886 were 14,675,633 lbs., against 13,736,171 lbs. in 1885.

The American Association for the Advancement of Science will meet in New York City in August next.

Missouri Pharmaceutical Association.—The time for holding the annual meeting has been changed from the 21st to the 28th of June.

Resignations from a Homœopathic Hospital.—Eight of the women physicians connected with the "Medical, Surgical, and Maternity Hospitals of the Women's Homœopathic Association of Pennsylvania" have resigned because the managers have made a rule that "no medicines, except strictly homœopathic potentized remedies, shall be allowed for use in the dispensaries or in any department of the hospital."

Extensive Opium Smuggling.—A telegram from Detroit of March 11th, to the *N. Y. Daily Tribune*, says: Large quantities of opium have been shipped recently from Detroit. In some way the Customs authorities learned of this fact. They ascertained that no such quantities had passed their hands as were being sent out of the city. Careful investigation revealed that the opium was being brought to America by way of British Columbia and shipped to Ontario, only to disappear and find its way to Detroit. The search for the offenders resulted today in the arrest of R. A. West, a temporary resident of this city. West was taken before United States Commissioner Graves this afternoon and held in $10,000 bail to answer to-morrow to the charge of smuggling. The customs authorities say that by smuggling this opium the Government has been swindled out of nearly $6,000. The opium was sent out from this city to California labelled "Glassware," "Drugs," and on its receipt at Windsor it appeared as "Chinese Curios."

Rhigolene and Oil are recommended by Dr. Aug. Stabeler, of Lawrence, Mass., as a vehicle for medicines to be applied in the form of spray to the nose and throat. He employs two parts of the former with six parts of olive or almond oil (by measure), and finds that the mixture requires no more air pressure than water does to convert it into a fine and permanent spray. It does not irritate the mucous membrane, but, on the contrary, seems to be mildly anæsthetic. When directed towards an open flame it does not ignite. Experiments demonstrate that it will readily dissolve copaiba balsam, oil of cubeb, camphor, eucalyptol, iodine, iodol, iodoform, oil of sassafras, salol, turpentine, thymol, and crystals of menthol, naphthalene and phenol; the mixture will hold in solution 3 per cent of resorcin. No astringent has yet been found which is soluble in the mixture, and he uses instead iodo-tannin which is prepared as follows: In a saturated tincture of iodine dissolve as much tannin as it will hold. This is miscible with any proportion of castor-oil and may be thinned with rhigolene to the desired consistence. The solution is clear, red, and slightly irritating, but the irritation quickly subsides.—*Med. News.*

Ergot was first described in medical works of the sixteenth century, but was probably long before known. Its specific physiological properties, however, were first understood and appreciated in modern times.

Bicarbonate of Sodium by Urethral Injection.—Acting upon the admitted theory that gonorrhœa is a parasitic disease and the observations which prove that the parasite can only flourish in an acid medium, Dr. Costellan ascertains, first, by means of litmus that the urethral discharge *is* acid and then advises the use of a 1% solution of bicarbonate of sodium to be injected 3 or 4 times daily. The scalding accompanying the passage of urine ceases at once and convalescence ensues, after about one week of this treatment.

Exports of Cinchona bark from Ceylon in 1886 were 14,675,663 lbs., against 13,736,171 lbs. in 1885.

Detection of Coloring Matter in Butter.

THE following for the detection of annatto is recommended by Mr. H. B. Cornwall:

Dissolve 5 grains of the warm filtered fat in 50 C.c. of ordinary ether in a wide tube, and shake the solution vigorously for 10 to 15 seconds with 12 to 15 C.c. of a very dilute aqueous solution of caustic potash or soda, only alkaline enough to give a distinct reaction with turmeric paper, and to remain alkaline after separating from the ethereal fat solution. The corked tube is set aside, and in a few hours, at most, the greater part of the aqueous solution, now colored more or less yellow by the annatto, can be drawn from beneath the ether with a pipette, or by a stop-cock below, in a sufficiently clear state to be evaporated to dryness, and tested in the usual way with a drop of concentrated sulphuric acid. If thought necessary, this extract may be further purified by shaking with a fresh portion of ether.

The dry, yellow, or slightly orange residue turns blue or violet blue with sulphuric acid, then quickly green, and finally brownish or somewhat violet, this final change being variable according to the purity of the extract.

Saffron may be extracted in the same way. It differs from annatto, the most important difference being in the absence of the green coloration.

Genuine butter, free from foreign coloring matter, imparts at most a very pale yellow color to the alkaline solution; but it is important to note that a mere green coloration of the dry residue on addition of sulphuric acid is not a certain indication of annatto (as some books state), because the author has thus obtained from genuine butter, free from foreign coloring matter, a dirty green coloration, but not preceded by any blue or violet-blue tint.

Turmeric is easily identified by the brownish to reddish stratum that forms between the ethereal fat solution and the alkaline solution before they are intimately mixed. It may be even better recognized by carefully bringing a feebly alkaline solution of ammonia in alcohol beneath the ethereal fat solution, with a pipette, and gently agitating the two so as to mix them partially. Blank tests should be made with the ether, but it is easy to obtain ether that leaves nothing to be desired as to purity.—*Am. Chem. Journal*, and *Chem. and Drugg.*

French Wines and Liquors.

UNITED STATES CONSUL GIFFORD, at Bordeaux, warns the American public to beware of French liquors, more especially brandy, because *no pure French brandy* is sent hither. After commenting upon the methods employed in making brandy for export, he goes on to say that the labels on the bottles do not represent the quality of the liquor they contain. The dates 1863, 1870, 1875, etc., do not, he says, mean that the inclosed liquor is brandy put up in those years. It means that the liquor has been made to resemble as closely as possible that which was really made in those years. In other words, the brandy sent hither from France is spurious, a concoction put up in the laboratory, in which the taste of good brandy is counterfeited by various chemicals.

It is worthy of comment that, while the laws against selling spurious wines and liquors in France are rigid in the extreme, little or no attempt is made to prevent the chemical preparation and adulteration of these liquids for exportation.—*Scientific American.*

Thymol as a Remedy in Tapeworm.

AN Italian physician recommends thymol as a remedy for tapeworm. A dose of about half an ounce of castor-oil is given in the evening, when the patient should abstain from food, and take, next morning, two drachms of thymol, divided into twelve doses, one every quarter of an hour. About half an hour after the last dose has been given, a dose of castor-oil should be administered. This is usually followed by the expulsion of the dead worm. Thymol quickly depresses the pulse, respiration, and temperature, and to obviate any ill effects from this cause, frequent doses of brandy or spirits should be given at the same time. The advantages of thymol are said to be that it produces no disturbance of the stomach, is rapid in effect, is both a tænicide and a tænifuge, and, while certain in action, will do no great harm if an error in diagnosis has been made.—*Chem. and Drug.*

Hippocrates employed a variety of medicines which, even at present times, are continually employed and held in high favor. Besides iron rust and hellebore, he was possessed of the knowledge of elaterium, colocynth, scammony, cantharides, asafœtida, papaver somniferum, mandragora, and antimony. As prophylactics he made use of wine, vinegar, and kindred articles, and employed them for lotions and enemata, and for the same purpose they are still in use, notwithstanding the fact that he is almost forgotten.

Gelatin Preparations.

FROM an interesting article on this subject, published in the *Rundschau* (1887, No. 6) by Mr. Adolf Vomacka, of Prag, who has had a large practical experience in this direction, we abstract the more important portions.

The proper kind of gelatin to be used is the *white* variety, as it has the lowest melting point, and is more apt to become liquefied at the temperature of the body. The best is the quality known as "French, white, silver." The proportions between gelatin, water, and glycerin cannot be the same in all cases, as the nature of the substance to be combined with the mass may require a modification.

Where gelatin preparations are in the habit of being ordered, it is best to keep on hand a supply of one or more suitable gelatin masses. When a supply of any of these is prepared, it must be well skimmed while liquid, then poured into glass jars, and after it is cold and set, a layer of alcohol is poured on top to prevent it from moulding. Of course, the jar must be well stoppered.

When it is wanted for use, the vessel is placed in a water-bath, and enough of the melted mass is then poured out.

The mass itself is prepared in the following manner:

Soak the exactly-weighed gelatin over night in distilled water and drain it upon a sieve next day. From there it is transferred to a porcelain capsule, and covered with enough distilled water to make up what is still lacking of between 4 or 5 times the original weight of the gelatine Next place the capsule into an upper retort ring, place a wire-gauze upon one below this, and carefully heat by applying a flame below the wire-gauze, care being taken that the mass does not become burned.

When it is melted, it is strained through a woollen cloth, then mixed with glycerin of spec. gr. 1.25, and evaporated until it reaches the quantity indicated in the below mentioned formulæ.

The mass is then allowed to cool, cut out from the dish next day, the somewhat harder rim or skummy surface stripped off, finally cut in several larger pieces, which are wrapped in paper, and kept in a moderately dry (neither too dry nor too moist) place for about a fortnight, when they are remelted, after which the mass is transferred to the glasses.

This process which appears somewhat cumbrous, yields a very serviceable mass. It is necessary to note upon the label carefully the exact proportions of gelatin, glycerin, or water.

For casting the suppositories, etc., moulds made of metal or soapstone are used. When making round vaginal suppositories, however, or similar preparations, well-oiled cones or globes of thin parchment paper are required. In the case of bougies, oiled glass tubes or quills are used.

If gelatin preparations are often called for in a pharmacy, it is best to use only metallic moulds.

For different preparations, differently composed masses will be required, namely:

	I.	II.	III.	IV.	V.
Gelatin	20	10	10	10	30
Water	80	40	40	40	120
Glycerin	40	15	20	30	15
Evaporated to	60	25	50	60	101

No. I., which is anhydrous, is used for such preparations as are to be kept in stock and are intended to remain transparent.

No. II. is intended for hygroscopic preparations.

No. III. for suppositories.

No. IV. for vaginal globules, ear suppositories, and bougies.

No. V. for sticks containing a large proportion of iodoform, or of bougies which are intended to contain a large proportion of ingredients insoluble in water or alcohol.

Nevertheless, these different masses may be required to be employed in a different manner. In each case it is necessary to adapt the mass to the ingredients.

The moulds to be used are first slightly coated with white vaseline or oil, and lightly rubbed out, so that only a minute layer of the fat remains behind.

If the moulds are not warmed, the cast products are apt to turn out full of air-bubbles or opaque, since the mass congeals in the cold mould, and prevents the escape of the retained air.

If some pulverulent medicinal agent is to be added to the mass, and the latter would anyhow remain untransparent, the mass must be allowed to become cool enough to cause a drop falling upon a cold stone to conceal. After this, it is poured at once into the cold mould.

Substances soluble in water or alcohol are dissolved in the least possible quantity of the menstruum and added to the melted mass, while stirring. Insoluble substances are incorporated, in the form of finest powder, by means of a pestle.

Too strong a trituration or stirring must be avoided, since the resulting air-bubbles are difficult to remove, and the product would suffer in appearance.

Special formulæ for various gelatin preparations are here appended.

I. BOUGIES.

a. With Sulphate of Zinc,
Sulphate of Copper,
Nitrate of Silver,
Extract of Opium,
Morphine Salts,
Corrosive Sublimate, etc.,
are prepared like the following:

Mass No. IV	99 parts.
Sulphate Zinc	1 part.

Dissolve the Sulphate of Zinc [or other salt] in a little water, add it to the melted mass, and pour into moulds.

If a large stock of sulphate of copper bougies are to be prepared, to be kept on hand, only so much of the salt as is required for one melted batch is dissolved and incorporated at one time, because were the whole mass made in one lot, it would soon become yellowish-green when it is reheated.

b. With Carbolic Acid and other substances easily soluble in alcohol.

Mass No. III	50 parts.
Glycerin	7 "
Carbolic Acid	3 "

Dissolve the Carbolic Acid in a small quantity of Alcohol, mix with the melted mass, and proceed as before.

c. With Iodoform (50%) or other substances insoluble in water or alcohol.

Mass No. V	54 parts.
Iodoform	27 "

Proceed as above directed. Dry the bougies, in a drying oven, until they are reduced to ⅞ of their weight.

d. With Ferric Chloride (5%).

Mass No. II	19 parts.
Ferric Chloride	1 part.

Dissolve the iron salt in a few drops of water, and proceed as before.

e. With Alum (2%).

Mass No. III	25 parts.
Distilled Water	10 "
Alum	0.7 "
Glycerin	10 "
Distilled Water	5 "
Evaporate to	35 "

Melt together the mass and the 10 parts of Dist. Water; then dissolve the Alum in the Glycerin and 5 parts of distilled water with the aid of heat, mix the solution with the melted mass while hot, and finally evaporate to 35 parts. (When the hot alum solution is mixed with the mass, the whole mixture coagulates and becomes viscid, but soon clears again, and becomes transparent, if it is cautiously heated on the water-bath, under careful stirring. The evaporating water must be replaced by fresh quantities of *boiling* water, until the mass is clear, when it may be evaporated as directed.

f. With Tannic Acid (2%).

Mass No. II	30 parts.
Glycerin	8 "
Tannic Acid	0.66 "
Evaporate to	33 "

Dissolve the Tannic Acid in the Glycerin, heat it, and add to the melted mass. Though this will coagulate the latter, yet it will become clear again if it is left for about ten minutes on the water-bath and slowly stirred. In this manner as much as 2 parts of Tannin may be united with 5 parts of Glycerin.

The resulting bougies are very easily soluble.

g. With Chloride and Salicylate of Sodium.

Mass No. II	30 parts.
Of each salt	the required quantity.

Triturate the salts to a very fine powder, mix, and add to the melted mass.

The preceding cases may be regarded as types for a variety of combinations. Now and then it will be necessary to increase the proportion of one or the other ingredient.

The bougies prepared in the foregoing manner are all quite soft and elastic. If harder ones are required, Vomacka recommends to cut out a square strip of stiff jujube paste, of such a thickness and length that, when it is dipped into the melted mass, it will become coated and form a round bougie of the required size.

II. SUPPOSITORIES.

These are usually prepared with mass No. II., yet it will be often necessary to modify the proportions so as to accommodate the medicinal ingredient. Gelatin suppositories should be somewhat more hard than bougies. If hygroscopic substances are to be incorporated with them, the mass should be as free from water as possible.

III. VAGINAL SUPPOSITORIES

are best prepared with the same mass as bougies, and

IV. EAR SUPPOSITORIES

with mass No. IV.

Terebene and the London Apothecaries.—A correspondent of the *British and Colonial Druggist* says: "I am, as you are aware, 'connected with the trade'—the last word should perhaps have been 'profession,' but that will not affect the value of my narrative. Staying in London for a few days was a friend of mine, and as on evening this week we were investigating the mysteries of the metropolis it became apparent that his interest was beginning to flag. With the instinct of a pharmacist who may one day have to prescribe in order to pay his rent and taxes, I soon detected reflections of physical pain in the countenance of my companion. Ably following up the symptoms, I arrived at the truth—stomachic inflation. Good! Terebene indicated. Get some. To the nearest chemist we went. He was busy. Happy man! Five real customers in his establishment at one time. Not revealing 'my connection with the trade,' I modestly proferred a request for five drops of terebene in a little water. 'Terebene?' quoth the professional gentleman behind the counter. I assented. 'Terebene?' he repeated; 'what for?' 'Flatulency.' He smiled broadly. 'Terebene!' he continued. 'I've heard of Terebene Soap.'" Again smiling in a manner which plainly meant 'I am a man of superior knowledge, but I'll give you another chance,' he inquired, 'Are you sure its *terebene*?' I was. Then came his thunderbolt. 'Why, terebene's a kind of turpentine. You don't want to take that internally.' I was crushed and we retired.

"We had an almost similar experience in the next pharmacy we went to, and I was there told we must be mistaken about the name. I must mean 'peppermint.'

"Three more establishments were visited, but none of them had terebene in stock. All these five pharmacies were in the W. C. district, and in selecting these to call at, I avoided, after my interview with the 'Terebene Soap Man,' several shops of inferior size as being unlikely places to get what I wanted."

Petrolatum as a Hat Restorer.—The *Scientific American* says: "When a hat becomes wet, or from other cause has lost its smoothness and gloss, cleanse it carefully from all dust, then with a silk handkerchief apply petrolatum evenly, and smoothe down with the same handkerchief until it is dry, smooth, and glossy. This will make a silk hat look as good as new."

Fatal Effect of a Large Dose of Thallin.—Prof. Ehrlich (*Münchener Med. Woch.*) reports fatal results in a case in which thallin tartrate was given in progressive doses of 1¼ up to 9 grains. Besides the usual lesions of typhoid fever, the autopsy showed hemorrhagic infarctions of the renal papillæ, which are considered to be characteristic of poisoning by this drug. This danger may be avoided by fixing the maximum hourly dose at 3 grains. Heart-failure, from any cause, contra-indicates its employment, as well as the various forms of kidney disease and cases which resist the influence of small doses.

Antipyrin is spoken of in *The Medical Record* by Dr. T. S. Robertson as a very efficient remedy in migraine. He has tried it in 80 cases and in 54 the remedy acted favorably in from ½ to 2 hours, and in 15 the pain was much lessened. In 8 cases there was little or no effect. Twenty drinks were given in Vichy water, and repeated in two hours if needed.

Steatite as a Dentifrice.—Several years since, Mr. Paul Vigier, of Paris, discovered that the addition of powdered soap-stone to water in steam boilers prevented the deposit of lime salts. Applying this observation, he has devised a tooth-powder in which the powdered talc is expected to prevent the deposit of tartar. The formula is:

Powdered talc	ʒ xv.
Dried alum (or cream of tartar)	ʒ i½
Powdered cochineal	ʒ iiss.
Essence of peppermint	gtt. xx.

The *Gaz. Hebdomadaire*, *Lancet*, and *Philadelphia Med. News* publish this formula without comment, but it seems important to add that there is hardly a substance so harmful to the teeth, next to mineral acids, as alum, and the fact that powdered soapstone is in very general use by mechanics as an ingredient of substances intended to prevent friction in machinery, does not promise much for its use as a polisher of tooth enamel. Besides these objections, what is to be said for the use of 2½ *drachms* of cochineal?—ED. A. D.

Tartaraline is the name of a substitute offered for tartaric acid. It is simply bisulphate of potassium.

The Cultivation of the Castor-oil Plant.*

ACCORDING to a common saying, the castor oil plant can be grown wherever Indian corn will grow. Yet this saying does not quite correspond with the facts, because, while it may accompany corn northwards as an ornamental plant, if the locality is favorable, its profitable cultivation is only possible in certain zones. In the United States, for instance, the northern limit is about the middle of Iowa, and as far as altitude is concerned, the castor-oil shrub remains from 2,000 to 3,000 feet below the level at which corn may still be raised. The castor-oil plant is not a food-plant like corn; its only value lies in its yield of oil; and the warmer its place of growth, the more oil will it yield. Hence it would be folly to expect large profits (if any at all) from the cultivation of the castor-oil plant in unsuitable localities.

The question of the applicability of any given locality for this cultivation, however, depends for answer upon still other conditions, besides atmospheric temperature. It is necessary to take into account the available moisture. In many parts of the subtropical zone the coldest period arrives at the close of the rainy season, which corresponds to the winter. This cold period must be allowed to elapse completely before sowing can take place. For neither corn nor the castor-oil shrub can stand the slightest frost, and their seeds rot in the ground unless the latter is thoroughly warm. This condition is not fulfilled until after the rainy season is over. Of course, where the natural rainfall is defective, artificial irrigation may be used, but this is never as effective as the former.

Before starting any plantation of the castor-oil plant, the amount of available moisture, either natural or artificial, must be thoroughly studied.

The castor-oil plant requires a very rich soil, if it is to yield an ample crop, as may be seen from the following composition of the ash of the seeds:

Lime	88.38
Magnesia	7.33
Oxide of Iron	0.89
Phosphoric Acid	38.65
Sulphuric Acid	2.21
Chlorine	0.89
Potassa	29.52
Soda	8.75
	100.00

Attention is called to the large amount of potassa, and particularly to the extraordinarily high percentage of phosphoric acid. The plant also requires a copious supply of nitrogen. Unless the cultivation is started on virgin soil, manuring can scarcely be avoided, though it would be useless to expect everything from artificial enrichment of the soil. The latter must be naturally adapted to it. It must, besides, be neither too loose nor too dense; neither stiff clay nor loose sand answer the purpose. A clayey sand- or sandy-clay bottom or alluvial ground is most conducive, provided it is of sufficient depth and porosity.

While it would be the most rational method to ascertain the capabilities and requirements of a soil by a chemical analysis of it, made from time to time—and this should be done if at all possible—yet in many cases this will be impracticable. It is, therefore, of advantage to know a manuring compound which is likely to furnish all the required constituents, without doing harm by the presence of one or another in excess. Such a compound is produced by a mixture of

Cotton Seed	750 parts.
Stable Manure	750 "
Superphosphates	500 "

If cotton seed cannot be obtained, the following may be used:

Cotton-seed Meal	500 parts.
Stable Manure	1,000 "
Superphosphate	500 "

These substances are to be made into a heap, under cover, and to be thoroughly moistened, in order to prevent overheating and to promote fermentation. After six weeks the mixture may be applied to the fields, from 1,000 to 3,000 pounds per acre, according as may be required. The soil must be turned deep, as the roots of the shrub penetrate to a considerable depth.

When the soil has been properly prepared, sowing may commence. This should be done in the beginning of the rainy season, except where frosts are to be expected near its end, in which case the beginning of the hot season must be awaited. The next question to be decided is which variety is most suitable for the locality. If the common species be employed, which usually grows to the height of about 8 feet in the subtropics, the plants must be placed at intervals of 4 feet in all directions. Under the tropics, the shrub grows 2 or 3 feet higher; the distance here must be 5 feet. If a still higher variety is chosen (such as *Ricinus sanguineus*), the distance should be extended to 8 feet.

In planting out on a large field, supposing the distance between the plant is determined at 5 feet, it is advisable to leave a space of 7 feet after every 5 rows of 5 feet apart, but only in one direction. This wider passage facilitates the harvesting.

The seed-beans are soaked for 12 hours in lukewarm water, then laid in pairs in the marked places, and covered with earth one inch high. As soon as the plants are 3 to 5 inches high, the weaker of the two plantlets is pulled out at every place. Sometimes 4 beans are planted at a time and the 2 weakest ones pulled out, but this is not to be recommended. If economy of space is necessary, it is better to put the plants closer together, rather than to duplicate them in one place.

The field requires only a repeated loosening of the soil with the cultivator, not with the plough, as this penetrates too deep and injures the roots. Hence, even the cultivator must be adjusted at a rather slight depth. How often this operation should be performed depends on the weather. Four repetitions are usually sufficient. Of course, the soil in the immediate vicinity of the plant must be loosened with the hoe or rake.

So far as known to the author, the castor-oil plant is only attacked by one insect, the same as infests the tobacco plant; all other insects shun it. In fact, the presence of the shrub appears to be a good agent to repel insects of all kinds. For this reason, probably, it is customary in some tropical districts to surround the field with several rows of castor-oil plants, a practice that appears to deserve imitation.

When the pods ripen, they turn brown, hard, and brittle, and begin to burst. All pods do not ripen on the plant at the same time, but the ripening process proceeds from below upwards. Hence the harvesting must be done in several instalments. For this purpose it is quite customary to use a sort of sled, drawn by a docile horse or other animal, which is guided through the wider passages of the field, while the ripe capsules are collected at either side of it and thrown into the box of the sled. A smooth ground is previously prepared at a suitable place in the neighborhood, and surrounded by a board fence 4 to 5 feet high. Upon this place, which must be exposed the greater part of the day to the hot rays of the sun, the capsules are piled to a depth of 3 to 4 inches, and turned over with a shovel once each day. With favorable weather, the capsules burst completely in 4 or 5 days. In order to separate still adhering seeds, a very light roller, drawn by an unshod horse, is rolled several times over the ground, the capsules being turned over before each new circuit.

The capsules and beans are then put in one heap, and the latter separated from the former by a winnower or by means of throwing with a shovel.

The ground having been cleared, it is ready for the next crop, and this is continued until the harvest is over. The shrubs are then cut down and put in the compost heap.

The clean beans are finally put in bags, and sold to the miller.

In the East Indies, the oil is extracted by crushing the beans between two rollers, the mass is packed into hempen sacks, and expressed by a screw-press. The oil is mixed with water, and the latter raised to boiling. This causes the impurities to rise to the top. The oil is next strained, bleached by exposure to the sun, and transferred into casks. In Oudh, the crushed beans are boiled with water, and the oil which rises to the surface gradually dipped off.

In the United States, the usual process followed is to expose the beans in an oven for an hour to a dry heat, which has been found to facilitate the extraction of the oil. They are next transferred [in bags] to a strong screw-press, and the oil, as it runs out, immediately mixed with an equal measure of water. The mixture is boiled for an hour, which causes the coagulation and separation of the albuminoids contained in the oil. After cooling, the oil is drawn off and transferred to large zinc tanks, in which it remains eight hours. Finally, it is exposed to the sun to bleach. One hundred pounds of beans yield about 18 quarts of oil. The finest oil is obtained by a process, which, according to the author, is only partially known. The beans are first passed through rollers in which their peel or skin is taken off, which contains an oil of disagreeable taste. They are then crushed, and either cold-pressed or extracted with alcohol. The oil is finally purified by contact with acids, and the final product is a fine, clear, nearly colorless oil, almost devoid of odor and taste.

* Extract from the valuable work: "Die Tropische Agricultur. Ein Handbuch für Pflanzer und Kaufleute," von Heinrich Semler in San Francisco. Vol. II., 8vo, Wismar, 1887.

Cali Nuts, according to Mr. Merck, are seeds resembling the Calabar bean, and, like the latter, come from the western coast of Africa. Their origin is not known, but they appear to be derived from a *papilionaceous* plant of the tribe *Phaseoleæ*. In appearance they are rounder than the Calabar bean, the latter being always longer than it is broad. The alkaloid obtained from cali nuts has effects similar to physostigmine.—*Pharm. Journ.*

New Local Anæsthetic.—A crystalline substance has been obtained in minute quantities from the rind of pomegranates, which, when placed on the tongue or other portions of the mucous membrane, paralyzes local sensation after the manner of cocaine.

Analysis of "Temperance Drinks."—The chemist of the Massachusetts State Board of Health has recently analyzed a large number of so-called temperance drinks, and has found that all of them contain alcohol, one of them containing as much as 44.3 per cent. Several of them contain more than 40 per cent, and a very large proportion more than 20 per cent. One of these is said by its manufacturer to be "a purely vegetable extract, stimulus to the body without intoxicating." "Inebriates struggling to reform will find its tonic and sustaining influence on the nervous system a great help to their efforts." This preparation was found to contain 41.6 per cent of alcohol.

Tonics.

Carter's Physical Extract, Georgetown, Mass., 22 per cent.
Hooker's Wigwam Tonic, Haverhill, Mass., 20.7 per cent.
Hoofland's German Tonic, Philadelphia, 29.3 per cent.
Hop Tonic, Grand Rapids, 7 per cent.
Howe's Arabian Tonic, New York, 13.2 per cent.
Jackson's Golden Seal Tonic, Boston, 19.6 per cent.
Liebig Company's Coca Beef Tonic, New York, 23.2 per cent.
Parker's Tonic, New York (advertised as without stimulants), 42.6 per cent.
Schenck's Sea Weed Tonic, Philadelphia, 19.5 per cent.

Bitters.

Atwood's Quinine Tonic Bitters, Boston, 29.2 per cent.
Atwood's Jaundice Bitters, Portland, 22.3 per cent.
Baxter's Mandrake Bitters, Burlington, 16.5 per cent.
Baker's Stomach Bitters, New York, 42.6 per cent.
Brown's Iron Bitters, Baltimore, 19.7 per cent.
Burdock Blood Bitters, Buffalo, 25. 2 per cent.
Carter's Scotch Bitters, Georgetown, 17.6 per cent.
Colton's Bitters, Westfield, 27.1 per cent.
Drake's Plantation Bitters, New York, 33.2 per cent.
Flink's Quaker Bitters, Boston, 21.4 per cent.
Goodhue's Bitters, Boston, 16.1 per cent.
Hartshorn's Bitters, Boston, 22.2 per cent.
Hoofland's German Bitters, Philadelphia (claimed to be free from all alcohol), 25.6 per cent.
Hop Bitters, Rochester, 12 per cent.
Hostetter's Stomach Bitters, Pittsburgh, 44.3 per cent.
Sulphur Bitters, Boston (contains no sulphur), 20.5 per cent.
Langley's Bitters, Boston, 18.1 per cent.
Mexican Tonic Bitters, Boston, 22.4 per cent.
Porter's Stomach Bitters, New York, 27.9 per cent.
Bush's Bitters, New York, 35 per cent.
Sherry Wine Bitters, Wakefield, 47.5 per cent.
Cinchonia Bitters, Providence, 13.1 per cent.
German Bitters, Concord, 21.5 per cent.
Strengthening Bitters, New Bedford, 29 per cent.
Old Continental Bitters, Lynn, 11.4 per cent.
Walker's Vinegar Bitters, New York, 6.1 per cent.
Warner's Safe Tonic Bitters, Rochester, 35.7 per cent.
Warner's Bilious Bitters, Boston, 21.5 per cent.
Wheeler's Tonic Sherry Wine Bitters, Boston, 18.8 per cent.
Wheat Bitters, New York, 13.6 per cent.
Faith Whitcom's Nerve Bitters, Boston, 20.3 per cent.
Williams' Vegetable Jaundice Bitters, Lowell, 18.5 per cent.—*Boston Med. and Surg. Journal.*

Adhesive Plaster.—Dr. Addinell Hewson recently gave a description of a method of preparing adhesive plaster: Bookbinders' paste, which in its pure and clean state is simply a wheaten flour paste, made in a porcelain crock by boiling thoroughly one part of flour in three or four parts of cleanly filtered water, always for twenty minutes, stirring the mixture all that time by a clean, new wooden or bone spatula, is applied by a thin strip of wood directly to the bare, clean integumentary surface of one of the edges which are to be secured, and then one end of a strip of gauze is to be laid on it and rubbed gently and smoothly so that the paste will come through its meshes. It should be applied no nearer the edge of the wound than collodion would be. It dries as quickly as the latter, and has, indeed, the advantage of always drying fast, even on a moist or dampened surface—a property wanting in liquid glass as well as glue, even where expedients have been previously used to dry the parts. When the end of the strip first applied is fixed by the paste, some of the latter is to be put on the other side of the wound, and the gauze strip drawn smoothly across it and pressed on that side, the surgeon watching the contact of the lips as to how well it is secured, rectifying any irregularity to be seen through the meshes by a probe. Sometimes in a long wound it may be advisable to secure the initial extremities of the gauze strips alternately on both sides. On other occasions it may be better to fix them on one side and draw all by their free extremities across, and so get equal amount of traction and tension in that way. The paste, when made strictly according to the directions I have given, and kept covered in a dry place, will not sour, and such paste can be made the vehicle of various kinds of antiseptics and disinfectants. By the addition of a small quantity of corrosive sublimate (one grain to a pint) immediately after it is fully boiled, it effectually prevents the germination and development of various kinds of microbes wherever it may be applied.—*The Polyclinic.*

Note on the Assay of Opium.

MESSRS. ADRIAN AND GALLOIS have published a short paper on the assay of opium in the *Arch. de Pharm.*, 1887, 147, in which they describe a method of taking fractions of the liquid extract mixed with the opium, which is calculated to avoid the error liable to be committed under ordinary circumstances, and which error has formed the subject of much previous discussion (see also this journal, 1886, 203; 1887, 12). We shall give their method of assay in outline, premising the remark that we do not believe it to be sufficiently expeditious for practical use, but yet distinguished by the special feature alluded to.

A sufficiently large amount of the opium to be assayed is thoroughly mixed so as to represent a perfectly homogeneous sample. Of this, 5 grammes are taken and triturated with 50 Gm. of alcohol of 70 per cent. After 12 hours, the whole is transferred to a tared filter, and the marc *exhausted* with more of the same menstruum. The residue is dried and weighed. It constitutes the quantity of matter insoluble in the menstruum contained in 5 Gm. of opium.

At the same time, when the preceding process is started, 50 Gm. more are taken from the same original well-mixed sample, transferred to a glass-stoppered bottle, and 200 Gm. of alcohol of 70% added. The stopper having been inserted, the bottle is placed in a warm position, at a temperature of 77° to 86° F. When the exhaustion of the 5 Gm. is completed, the amount of insoluble matter present in the 50 Gm. is calculated from the result previously obtained. A quantity of alcohol of 70% equivalent to this amount of calculated insoluble matter is then added to the flask, which will then contain a quantity of extractive and of water (from the opium), and of alcohol, weighing 250 grammes.

Supposing an opium had been operated on, 5 Gm. of which, when exhausted with the kind of alcohol mentioned, leave 2 Gm. of dry residue. The other 3 Gm. then represent the water and soluble matter in the opium; 50 Gm. of the same opium, therefore, contain 20 Gm. of insoluble matter. According to the authors, the flask is made to contain

50 Gm. of the opium,
200 Gm. of alcohol,
and to this is finally added
20 Gm. more of alcohol,

hence, if it were possible to separate the final liquid solution completely from the insoluble portion, we would obtain

20 Gm. of insoluble residue from the opium, and
250 Gm. of solution.

The liquid is allowed to macerate with the opium until it has thoroughly extracted all soluble matter, after which it is allowed to become cold. Finally the flask is tared, any loss by evaporation restored, and the liquid filtered with precautions against loss. There will now exist a definite relation between the liquid and the original opium. For instance, 200 Gm. of the filtrate will correspond exactly to 40 Gm. of the original opium.

The idea of thus making up the insoluble residue in the mixture by an equivalent amount of the menstruum is capable of practical application elsewhere. We believe the above-described method can be much shortened with retention of this feature.

Absorbent Canton Flannel.—England, in describing antiseptic dressings which he prepares for use in the Philadelphia Hospital, describes as follows his preparation of canton flannel:

Under this term we use, in the Philadelphia Hospital, a canton flannel rendered absorbent by boiling in a 3 per cent solution of caustic soda for 1¼ or 2 hours, until all the fatty matter in the fibres is decomposed, then washing in several portions of cold water, then macerating for 10 or 15 minutes the product in a 1.5 per cent solution of hydrochloric acid, whereby any traces of free soda are neutralized, and the fibres of the goods are whitened; and, lastly, followed by several washings in water, wringing out with a machine and drying. This product has been found to be peculiarly serviceable in hospital practice as a cheap, efficient, and reliable substitute for all the minor cases for which at present the so-called patent lint is generally demanded; for example, in local applications of lotion of lead-water and laudanum, and as a dressing with various ointments upon chronic sores, ulcers, etc. The proof of its utility may be inferred from the fact that while we used, during 1886, 1,500 yards of patent lint, we used also 2,500 yards of this absorbent canton flannel. In cost it is almost one-half of that of patent lint.—*American Journal of Pharmacy*, April, 1887.

Glycozone, a recently introduced disinfectant, is said to consist of glycerin with 4% of ozone [more probably peroxide of hyrogen.—ED. AM. DR.].

QUERIES & ANSWERS.

Queries for which answers are desired, must be received by the 5th of the month, and must in every case be accompanied by the name and address of the writer, for the information of the editor, but not for publication.

Correction.

In our reply to Query 1,937 we quoted Atkinson's "Fabrikation der ætherischen Oele," and mentioned its *second* edition. This was an error, committed by a fault of memory. Our own copy is the first edition and there is no second in existence. There is, however, a second edition of Atkinson's "Parfümerie."

No. 1,943.—**Antiseptic Gauzes** (W. A. B., New Orleans; and J. S. W., Cleveland).

You will find notes on the preparation of these dressings in our last April number, p. 78; and in various preceding volumes, for instance, 1885, 177; 1884, 21, 235, etc., etc. (see the indexes). You will also find notes on the subject in the present number.

No. 1,944.—**Plummer's Powder** (E. S. W.).

This is a compound powder intended to represent the well-known Plummer's Pill. It is used by physicians in some parts of Germany. In the latest edition of the Formulæ Magistrales Berolinenses, the following formula is given (translated into our weights):

Calomel	gr. 4
Sulphurated Antimony	" 4
Sugar	" 36
Althæa, powdered	" 16
	gr. 60

Divide into 12 powders.

No. 1,945.—**Wilkinson's Ointment** (E. S. W.).

The composition of this is as follows:

Sublimed Sulphur	½ oz.
Tar	½ "
Green Soap	2 "
Lard	2 "
Pumice Stone, pd	½ "

No. 1,946.—**General and Applied Chemistry** (J. D'E., Quebec).

There are many large treatises on general and applied chemistry in the French language. As the most recent ones are generally the most desirable, provided they are written by competent authorities who are masters of the subject, we will quote only one, which has recently appeared: "Traité de Chimie générale, analytique et appliquée." Par Raoul Jagnaux. 4 vols., 8vo (illust.). Paris: (Octave Doin) 1877; 48 francs.

No. 1,947.—**Oiled Silk** (J. E.).

This correspondent states that the formula for making oiled silk, given in reply to query 1,865 (in February number), works satisfactorily, but "he cannot get it smooth and glossy." He would like to know how this may be accomplished.

So far as we know, this is brought about by passing the fabric between heated rollers, a piece of damp but very smooth fabric being passed on either side of the oiled silk. We have not seen this ourselves, but give it on the authority of one who has made oiled muslin in this manner. The same person also tells us that the composition of the mixture with which the muslin or silk is coated requires alteration, according as the finished fabric is to be used in a cold or in a warm climate, or in winter or summer.

It will only be necessary for you to experiment in order to get at the secret of producing the desired result.

No. 1,948.—**Removal of Copper from Extracts** (W. S. G.).

We are asked: "How may copper be removed from extracts which have become contaminated with it by being made in untinned copper vessels?"

There are several ways to accomplish this, but in all cases it is necessary to redissolve the extract in the menstruum originally used in this preparation before attempting the removal of the copper. In some cases, it is possible to effect the latter by electrolysis, without spoiling the product. But as the withdrawal of the copper is, to a certain extent, dependent upon the introduction of another though perhaps less objectionable metal, it is preferable to employ some reagent which will precipitate the copper.

A small portion of the filtered solution of the extract is taken and mixed with a small quantity of dilute solution of ferrocyanide of potassium. After awhile, a piece of bright steel is immersed into the liquid, and if this presents any traces of a coating of metallic copper when withdrawn, a little more of the reagent is added. This is continued as long as any reduction of copper is observable. The whole solution of the extract is then treated with the calculated amount of ferrocyanide, the liquid filtered, and finally evaporated again to an extract.

No. 1,949.—**Caffeine** (M. Ch.).

We have heretofore stated that caffeine is at present probably not made in this country at all. In fact, we are informed that no caffeine has been made here for years, though now and then sporadic attempts have been made to prepare it. All the caffeine or theine of the market are made from one and the same source, usually *tea*, the refuse of tea warehouses, or lots of tea damaged by salt water, etc., being utilized for this purpose when they are available. There is no trouble about extracting the caffeine; the only difficulty is to deprive it of the last trace of coloring matter. A very good process is that once proposed by Dragendorff, and recently again recommended in a slightly modified form by A. Lösch:

Boil tea-leaves twice with water, filter the extract, and wash the residuary leaves with boiling water until this runs off colorless. Unite the liquids, mix it with a quantity of calcined magnesia, corresponding to 1½ times the weight of the tea-leaves, and evaporate in the water-bath. Rub the residue to a fine powder, and extract it with hot chloroform. Recover the chloroform by distillation, redissolve the residue in boiling diluted alcohol, mix it with freshly ignited animal charcoal, filter boiling hot, washing the charcoal with enough of the menstruum, and allow to cool, when the caffeine will crystallize. Large, fine feathery crystals are best obtained by dissolving the previous residue in boiling water instead of diluted alcohol.

No. 1,950.—**Vulpius' Morphine Reaction** (Yale).

This reaction has been published only recently. It suggested itself to Dr. G. Vulpius through the action of sulphuric acid and an arseniate upon morphine, which was discovered some time ago by Donath (see AMER. DRUGG., 1886, 154). Arseniates and phosphates having so many characteristics in common, Dr. Vulpius tried a phosphate, and found that this answered the purpose. He describes the modus operandi as follows:

If to a few drops of a solution containing at least ¼ milligramme of a morphine salt (or to at least the same quantity of the salt, *dry*), there are added, in a porcelain capsule, about 6 drops of concentrated sulphuric acid, then a few centigrammes (from ½ to ¼ grain) of phosphate of sodium, and the capsule warmed over the flame under constant rotation until white fumes are emitted, the contents of the capsule will assume a violet tint, and if quickly cooled, the liquid will have the appearance of syrup of violets. If the heat is continued a little longer, the color will turn to brownish. On adding water, drop by drop, to the cold mixture, a bright red color will at first be produced, which is changed to dirty green as soon as the quantity of water reaches 3 to 5 grammes. On shaking the mixture now thoroughly with an equal weight of chloroform in a test-tube, the chloroform will, after separation, be found to have acquired a fine blue tint. By this behavior the present reaction is sharply distinguished from the ferric chloride reaction. The latter also produces a blue color in morphine solutions, but the color is not taken up by chloroform, the latter remaining absolutely colorless.

What the nature of the blue color is, we are unable to say. It may be assumed, however, that the morphine molecule is at least partly decomposed, and that some of the resulting derivatives are veritable coloring matters, varying in their solubility according as they are acids or bases or salts, or according to the nature of the menstruum. In the case of the phosphate reaction, where there is considerable free acid present, the coloring matter is probably of an acid nature, and is evidently soluble in chloroform; probably also in other volatile liquids of allied properties. In the case of the ferric chloride reaction, the colored compound is more likely to be of a neutral character, as it is rendered colorless or prevented from forming in presence of an acid.

No. 1,951.—**Haustus Ferri Sulphatis** (Supplement to Query 1,942).

We have received several communications on this subject, of which we can only print the salient portions.

One correspondent writes as follows:

"Haustus (recte *Haustum!*) is the Latin name for drink, potion, beverage." Haustum ferri sulfurici is prepared, as far as I remember, after the following formula in some parts of Germany, England, etc.:

Ferri Sulphatis Puri	ʒ i.
Acidi Sulphurici Diluti (1-5)	ʒ ij.
Aquæ Destillatæ	q. s. ad fl. ʒ 8.

We are obliged to our correspondent for the information, but desire at the same time to state that we claim to be better acquainted with Latin than he. *Haustus* is perfectly correct; there is no such noun as *haustum*. *Haustus* belongs to the large class of substantives of the 4th declension, formed from verbs by the affix *-us*, (or -tus) which may be regarded as the declinable noun-formation corresponding to the supine. All these nouns express the action of the verb: *haurio*, to imbibe, etc.; *haustus*, the act of imbibing; *utor*, to use; *usus*, the act of using, the use. Then many of them are applied to the *object* of the action of the verb, f. i. *haustus*, "the object of the imbibing" = "the drink," etc.

Another correspondent states that *Haustus ferri sul-*

phurici has at one time been used as a name of a dilute solution of sulphate of iron (otherwise called "Aqua Mineralis Marci," or Marcus' Mineral Water), used as a remedy in intermittent fevers accompanied with anæmia or decided leucæmia. The proportions were about:

Ferri Sulphatis	ʒ i.
Aquæ Destillatæ	fl. ʒ 16

We doubt whether either of the above was meant in the prescription mentioned under Query 1,942. However, it is much more likely that the first of the formulæ here quoted was intended than the second.

No. 1,952.—**Inosit** (San Francisco).

This variety of sugar occurs rarely in the urine of man or animals. It has now and then been met with in albuminuria and diabetes. Possibly it may occur oftener, but it is so rarely expected, or purposely looked for, that its rarity may only be apparent.

It is impossible to base any definite conclusions upon any reactions for inosit in urine or other complicated liquid. To recognize it, it must be isolated in as pure a condition as possible, and this may be done in the following manner:

Free the urine of albumin, if any is present, then reduce it to about ¼ of its volume, and precipitate it with just enough solution of neutral acetate of lead, filter and precipitate the warmed filtrate with just enough basic acetate of lead. Allow the mixture to stand quietly during 12 hours, then collect the precipitate upon a filter, wash it with water and decompose it with hydrosulphuric acid. Filter, and after some uric acid has crystallized out of the filtrate, filter again, evaporate to a very small bulk, and mix it, while boiling hot, with 3 to 4 times its volume of alcohol. If this produces a copious precipitate adhering to the glass, the hot alcoholic solution is simply poured off. But if a flocculent, not sticky precipitate is produced, the hot solution is passed through a filter and allowed to cool. If inosit crystals have separated after 24 hours, they are collected on a filter, and washed with a little cold alcohol. If no crystals have separated, however, the cold, clear, alcoholic filtrate is gradually mixed with ether, until a milky mixture is produced by shaking, after which it is set aside for 24 hours. An excess of ether does no harm and insures the complete precipitation of the inosit.

The best reaction for the identity of inosit is that of Scherer, which is not afforded by any other carbohydrate:

If a solution of inosit is evaporated, almost to dryness, upon platinum or in a capsule, together with a little nitric acid, the residue be afterwards moistened with a little ammonia and solution of chloride of calcium, and again cautiously evaporated to dryness, a bright, rose-red color is produced. According to Boedeker, the addition of ammonia, in this test, is rather detrimental than beneficial. In many cases the residue turns brown under the influence of ammonia; without ammonia, it turns rose-red. If the color does not make its appearance at once, the heat should be continued for some time.

No. 1,953.—**Nickels' Improved Funnel** (Several inquirers).

We have given Mr. Nickels' address on page 81 of our last number, and have no doubt he will respond to any inquiries that are directed to him. Meanwhile, we will quote a few passages from a communication we have received from him on the subject.

"In addition to the advantages of quick filtration, washing, drying, etc., set forth in the previous description, there are two very important advantages possessed by these funnels, namely:

1. *Dialysis.*

This most important operation, as usually conducted is tedious and troublesome, owing to the difficulty o forming a tight joint between the parchment paper and the hoop containing the liquid to be dialyzed. Here all that is necessary is to attach a piece of rubber tube with stop-cock attached to the end of funnel, cut the parchment paper as a filter paper, placing the same in the funnel, and filling it with the liquid to be dialyzed. The jacket between the two funnels is filled with distilled water, which, as it becomes charged with the products of diffusion, can be run off, and a fresh supply introduced, thus minimizing the quantity of water, a *most important feature* in this operation.

2. *Filtration of Volatile Liquids.*

The complicated apparatus to avoid loss by evaporation is well known; the operation, however, can be quickly and thoroughly conducted by means of these funnels; the funnel is "corked" into a flask or receiving vessel, filter paper inserted, and liquid introduced in the usual manner; the top of funnel is then covered with a disk of India rubber (or some material not affected by the liquid), and surmounted with a disk of glass. As the filtrate runs into the receiving vessel, the displaced air from the latter finds its way into the jacket between the two funnels and thence through the holes of inner funnel at the top, allowing filtration to proceed uninterruptedly without any loss from evaporation.

No. 1,954.—**Preparation for Chapped Hands** (Maine).

This correspondent sends us a formula for a preparation for chapped hands, which has given him trouble. But as he does not state how he endeavored to combine the ingredients, we are unable to afford him any assistance. So far as we can judge by examining the formula, without experimenting, it appears feasible enough, except that the oil of sweet almonds appears to be rather small in amount:

Almonds, Blanched	1
Rose Water	6
White Wax	1
Expressed Oil of Almonds	2
White Castile Soap	1
Honey Water (perfume)	2
Cologne	1
Glycerin	½
Oil of Bitter Almonds	gtt. 6

We would proceed in the following manner: Melt the wax and oil of sweet almonds (which will perhaps have to be increased in quantity) in a deep and rather narrow vessel; then add the soap, and allow to melt. Having blanched the almonds, beat them to a perfectly smooth milk with the rose water gradually added, strain through muslin, mix the strained liquid with the glycerin and pour the mixture slowly, and while briskly agitating (perhaps best by means of an egg-beater) into the melted wax, etc. When the mixture has cooled, add the perfumes in the same manner.

A very good preparation, among others, is said to be the following, published by E. Dieterich:

Expressed Oil of Almonds	1 lb. 4 oz.
White Wax	3 oz.
Spermaceti	3 oz.
Distilled Water	10 oz.
Borax	75 grains.
Cumarin	¾ grain.
Oil of Bergamot	30 grains.
" Rose	8 "
" Bitter Almonds	10 drops.
Tincture of Ambergris (1 : 10)	5 "

Melt the Wax and Spermaceti with the Expressed Oil of Almonds, allow to become nearly cold, and then stir until it becomes light and foamy. Now add the Water in which the Borax had previously been dissolved, and finally the other ingredients.

No. 1,955.—**Cultivation of Coriander** (Kentucky).

We are asked by one of our subscribers, who has occasion to use considerable quantities of coriander and its essential oil, whether it is not possible to carry on the cultivation of coriander successfully in this country, particularly as it is often difficult to get good coriander from abroad.

In reply we would state that we have no doubt whatever that this can be done, provided only that the expense of cultivation does not raise the cost of the product too high, which is a point for our correspondent to ascertain.

From a useful little work by G. A. Schoeller, on the cultivation of medicinal plants, published in 1843, we will give a few hints regarding the cultivation.

Coriander requires a loose clayey soil, rich in humus, rather moist, and free from weeds. The soil must be deep, as the roots penetrate to a considerable depth. The climate must be rather warm and even, and not too moist. In hilly districts it does not thrive. Coriander cannot bear a freshly manured soil, but prefers one containing rather old humus. But on poor soil, manuring with decomposed leaves, etc. (*not* stable manure) is very useful. It is best to let coriander follow a crop of clover or to choose a fallow field. Otherwise it may be grown after any kind of crop which does not exhaust the ground too much. It requires a good deal of nourishment itself, and drains the ground considerably, hence it can be followed only by such vegetables as do not require much nourishment. The ground must be worked over in the fall, as deep as possible, and carefully weeded. In the early spring it is raked over, and the seed (of best quality) sown as soon as the frost is out of the ground. Very commonly, coriander is sown together with carrots. If sown alone, the amount to be used is about one-fourth of that usually scattered when sowing rye. Coriander prefers moisture when young; later on, however, warm weather. At the end of July or beginning of August it ripens. As the seeds ripen unevenly, a proper period must be chosen when the largest portion of seeds are ripe. And since the seeds are so ready to fall out, it must be harvested early in the morning, after a fall of dew. It is cut off with sickles, and carefully put together in piles, with head up. The bundles are afterwards cautiously carried to a large cloth spread upon the field, and the seeds shaken out by beating bunches of the plant together. On an average an acre of ground yields 1,200 lbs. of coriander, but this may sometimes reach 1,500 lbs.

No. 1,956.—**Blue Prints** ("Inquirer").

When ferricyanide of potassium or *red* prussiate of potash comes in contact, in solution, with a *ferrous* salt (such as the green sulphate of iron), it produces an insolu-

ble blue precipitate of "Turnbull's blue." With *ferric* salts, it only produces a greenish-brown solution, but no precipitate. If, however, the latter mixture be treated with a reducing agent, or is exposed to sun-light or even day-light, the *ferri* compound is reduced to a *ferro*, and a blue color or precipitate will appear. The gradual change of the ferricyanide to ferrocyanide can be noticed even in a plain aqueous solution of the salt, which, when old, will distinctly react with ferric salts, and produce more or less of a blue color or precipitate.

The process may be executed in the following manner, though the composition of the impregnating liquid may be variously altered.

Ferricyanide of Potassium (Red Prussiate of Potash)..	2 oz.
Citrate of Iron.....	2 "
Distilled Water.....	24 "

Dissolve each salt in one-half of the water, filter, and mix the two solutions in a room completely inaccessible to day-light, and only feebly illuminated by artificial (candle or gas) light. With this solution coat uniformly *one* side of sized paper of suitable dimensions. This may be done either by brushing the solution over it, or by floating the paper on the surface. It is then hung up to dry. But special care must be taken that no day-light will fall upon it during any part of the process. When it is dry, it may be rolled up and kept in tight tin boxes.

When this paper is exposed to day-light, it will gradually turn blue, in accordance with the explanation previously given. If any portion of its surface is prevented from being exposed to day-light, this portion will remain unaffected, and the mixture of the two salts dried upon it may be washed off, in the dark, so that when the paper is subsequently exposed to day-light, the portion just spoken of will have the natural color of the original paper.

The drawing that is to be copied must be made upon transparent or so-called tracing paper with as black and dense an ink as possible. India ink is the best. A proper printing frame must be provided, so arranged that the drawing may be firmly pressed upon the prepared paper without air-bubbles or creases.

It will not be necessary to describe the printing frame, except perhaps to say that it is on the principle of a picture frame, only that there is much more distance between the glass and the backboard of the picture.

Everything being ready, the printing frame is opened in the dark room, glass-face downwards. Upon the glass is laid the drawing with the tracing on the *upper* surface *not* on the glass side). Upon the drawing is laid, prepared side downward, a suitable piece of the prepared paper. Upon this is laid a pad of felt or paper, and the back of the frame is then put in and firmly fastened and pressed in place.

Before taking the frame out into day-light, it is, *under all circumstances*, necessary to reverse the frame, and to carefully examine the position and condition of the drawing. Sometimes it will happen that an air-bubble is inclosed, which, of course, would produce a blur upon the print, as the light will be able to get under dark lines, where it ought to have been stopped out. At other times, it may be found that the drawing has been displaced. Again, some foreign substance may have dropped in front. We can speak from experience, and can say that we have lost several good impressions by hurry, in the beginning of our amateur experiments. We have not lost any since.

If everything is satisfactory, take the frame out into the open air, and expose it, if possible, to sun-light. From five to ten minutes will be sufficient. If bright sun-light is not available, day-light will do, but then it may require hours to produce the desired effect. The proper time of exposure can be easily told from the appearance of the paper upon the exposed portions. It should have a dark greenish-blue, but not fully blue tint. If it attains the latter, it is generally overdone. At the proper time, the frame is carried back to the dark room, opened by gas-light, and the prepared paper immediately floated, face downwards, in a tank or other vessel of suitable size, containing pure water, the back of the paper being gently worked over by the ends of the fingers so as to facilitate the solution of the still adhering salts. On reversing the paper, it will be seen that all the greenish-blue exposed portion has turned a pure blue, and the non-exposed portion (covered by the drawing) will be *white*.

The print is then taken out of the tank, laid over a stick, washed with pure water and hung up to dry.

We have found it, in the long run, more economical to purchase the prepared paper ready-made than to make it ourselves. It is made by manufacturers in such quantities that they can sell at very small profit. Moreover, they have every facility for turning out a uniform and handsome product. We can recommend, as a source of supply, Messrs. Keuffel & Esser, of 127 Fulton street, New York.

Those who have much blue printing to do should procure an apparatus permitting absolute contact of drawing and prepared paper without risk of breaking the glass by pressure from the back. This is accomplished by an arrangement devised by Schleicher & Schüll, of Düren, Germany, in which the contact is brought about by a small air pump attached to the frame which exhausts the air from between drawing and paper. The prices of these printing frames, on foot with rollers, and complete, vary, according to size, from 60 to over 200 marks.

Formulæ asked for.

1. *Pilulæ Anæstheticæ.* What is the composition?
2. *Rush's Lung Balm.*
3. *Palmer's Cosmetic Lotion.*
4. *Pike's Salt Rheum Salve.*

CORRESPONDENCE.

Strophanthus.

The Editor American Druggist:

SIR:—We notice on page 65 of your issue for April, 1887, an article upon Strophanthus, in which you refer to a "false Strophanthus" having made its appearance in the London market. As the specimen in question was imported by us and has been the subject of an interesting discussion amongst botanists, we think a short account of the seed will not prove amiss:

The seed was received by us last year from the west coast of Africa, and was labelled Strophanthus. Having submitted same to Mr. E. M. Holmes of the Pharmaceutical Society, and to Mr. Helbing, it was at first thought to be a Holarrhena or Wrightia; but after carefully examining it, Mr. Holmes found it to possess the characters of the genus Kickxia, of which two species only are described, one from Java and the other from Africa. These seeds, which were at first thought to be a Holarrhena, have now been named *Kickxia africana* Benth., and are being thoroughly examined by Professor de Burgh Birch as to their chemistry and physiology. We hear he has found an interesting alkaloid in them, upon which he will soon report. In No. 10, "New Commercial Plants and Drugs," we have given the following sketch of the seed, showing the curious manner in which the plume is attached to the seed. Though the seed itself somewhat resembles that of the Holarrhena or Wrightia, the fact of its possessing a plumose appendage attached to it does not permit of its belonging to the germs Holarrhena, in which the tuft of hairs is deciduous.

We may, in conclusion, say that we are giving every facility for the thorough investigation of this seed, and from what Prof. Birch has so far ascertained, the report may be looked for with interest.

Trusting we have not too much trespassed upon your valuable space, we remain, sir,

Yours truly,

THOMAS CHRISTY & CO.

P. S.—You will note that the plume is reversed; but the hairs fall back when it is freed from the pod.

25 LIME ST., LONDON, E. C., April 26th, 1887.

Antithermine.—A patent has been taken out in Germany for a new antipyretic and antiseptic, for which the above short title has been proposed by M. Nicot in *Nouveaux Remèdes*. It is prepared by dissolving phenylhydrazin in dilute acetic acid, and adding to this solution a solution of levulinic acid ($C_5H_8O_3$). [Acetopropionic acid is also mentioned by Nicot. This acid is considered identical with levulinic acid, as its physical properties are but slightly different.] When the two solutions are mixed, a yellow precipitate forms. This is antithermine or phenyl-hydrazin-levulinic acid, which has the formula,

$$C_6H_5NHN \begin{cases} H \\ C_5H_7O_3 \end{cases}$$

It is purified by recrystallization from alcohol.—*Chem. and Drugg.*

Infantile Constipation.—A very successful remedy for this is podophyllin in small doses: iridin may be combined with good effect. Make a tincture of the following: Podophyllum resin, gr. viij.; iridin, gr. v.; spt. ammon. arom. ʒi. Digest for several days, and filter. From one to two drops of this may be given at bedtime on a small piece of loaf sugar, or the dose may be combined in mixture along with syrup of orange. This is the dose for a child of one year and under. [Iridin is a "resinoid" of Iris versicolor.—ED. AM. DR.]

Deterioration of Chlorinated Lime by Keeping.—Pattinson has made a series of experiments to determine the ratio of deterioration which chlorinated lime undergoes on keeping either in casks or in bottles. He found that when the temperature did not exceed 16° C., chlorinated lime kept in casks, in a dry place, lost, on an average from 2 to 3 per cent of chlorine during a year. That kept in bottles lost somewhat less than 1 per cent.

FORMULAS.

Antiseptic Gauzes.

THOUGH most of the antiseptic gauzes or dressings below mentioned are usually purchased from manufacturers, yet there are many pharmacists so situated that they could not obtain the desired supply in time for the occasion when it is to be used. They should, therefore, be able to prepare them when wanted. The following directions and formulæ, published in Dieterich's *Neues Pharmaceutisches Manuale** will supplement, or recapitulate, what we have said on the subject ourselves heretofore.

The crude material, viz., the absorbent gauze, is not easily prepared with advantage on the small scale, and had therefore always better be kept on hand in ample quantity.

All manipulations in making antiseptic dressing must be performed so that the products are homogeneously saturated, of known strength of important ingredients, of handsome appearance, and that their antiseptic effect will not be interfered with, or diminished.

When gauze is to be saturated, it is first necessary to know its own weight. After having been laid into the antiseptic liquid (which is prepared with reference to the weight of the gauze), it is kneaded in it for 15 to 20 minutes, and then expressed to a definite weight, so that the gauze will retain the amount of antiseptic material which it is intended to hold.

A good absorbent gauze usually retains, after strong pressure, 1¼ times its own weight of liquid. Hence 1,000 parts of absorbent gauze, after being soaked in a hydro-alcoholic solution, say of salicylic acid, will, after pressure, weigh 2,500 parts.

If large quantities are to be prepared, tubs lined with tinned iron may be used, except in the case of certain agents incompatible with iron, such as salicylic acid, in which case earthenware troughs are preferable. When small quantities are to be prepared, ordinary evaporating dishes may be used. If heat is required, a steam or water-bath is to be used. Pressing is done by an ordinary press, but care must be taken that the liquid is uniformly distributed through the mass. [We have found a common clothes-wringer to be the most suitable apparatus, in all cases where the liquid remained unaffected by the iron parts. —ED. AM. DR.]

If a certain amount of gauze is to be treated, without any liquid remaining over, the material is placed into the latter, kneaded for 10 or 15 minutes and then kept compressed by weights. By means of repeated turning over and pressure at a moderately high temperature (according to the nature of the menstruum), the liquid is evenly distributed through the fabric. Finally, the latter may be subjected to just so much pressure as it will stand without any of the liquid running out. The same method is used in the case of liquids which are prepared without the aid of inert solvents, such as Lister's eucalyptus or carbolized gauze.

To freshly prepare a few yards of any gauze, a supply of the corresponding liquid is kept on hand, the proper amount of absorbent gauze soaked in it, then laid in oblong form upon parchment paper, folded up in the latter, and passed through a press, enough pressure being applied to have it retain about 1¼ times its own weight.

In the case of alcoholic or aqueous solutions, the drying of the fabric may be done upon strings or wooden rods, but with fatty or ethereal fabrics it is better to wind them upon a wooden roller, upon which it is left for at least 24 hours, when it may be cut off as required.

1. *Benzoated Gauze* (Bruns, jr.)

	5%	10%
	PARTS.	
Benzoic Acid	60	120
Castor Oil	25	50

Or,

Rosin	12.5 }	25 }
Castor Oil	12.5 }	25 }
Alcohol	1,415	1,330
Absorbent Gauze	1,000	1,000

Saturate and express to a weight of 2,250 parts. Dry upon a reel.

2. *Borated Gauze.*

	10%
	PARTS.
Boric Acid	120
Boiling Water	1,380
Absorbent Cotton	1,000

Saturate hot, and express to a weight of 2,250 parts. Dry upon wooden rods or strings.

[To prevent the boric acid from dusting off, about 5% of glycerin may be mixed with the water; that is, 70 parts of glycerin and 1,310 parts of boiling water may be taken. Or, a small quantity of tincture of myrrh may be added to the liquid—merely enough to impart to it a slight adhesiveness when dried upon the fabric, without, however, interfering with the absorbent power of the latter.

3. *Carbolized Gauze* (Bruns, jr.).

10 per cent.	
	PARTS.
Rosin	450
Castor Oil	50
(*or* Stearin	100)
Carbolic Acid	120
Alcohol	850
Absorbent Gauze	1,000

Saturate hot, and express to 5,250 parts. Dry during 24 hours upon a reel.

4. *Carbolized Gauze* (Lister).

	5%	10%
	PARTS.	
Carbolic Acid	50	100
Rosin	500	500
Paraffin	700	700
Absorbent Gauze	1,000	1,000

Saturate at a temperature of 140% to 158°, pressing the gauze into the melted mass by weights. Then press for half an hour between warm plates and pack immediately.

5. *Acetate of Aluminium Gauze* (Burow).

	5%	10%
	PARTS.	
Solution Acetate Aluminium	750	1,500
Distilled Water	750	
Absorbent Gauze	1,000	1,000

Saturate and express to a weight of 2,250 parts. Dry upon strings or wooden rods.

6. *Eucalyptus Gauze* (Lister).

4 per cent.	
Oil Eucalyptus	40 *parts*
Damar Resin	240 "
Paraffin	360 "
Absorbent Gauze	1,000 "

Prepare as in No. 4.

7. *Iodoform Gauze* (Mosetig).

	10%	20%
	PARTS.	
Iodoform	100	200
Ether	700	1,200
Alcohol	700	
Absorbent Gauze	1,000	1,000

Saturate the gauze in either case with the solution, wrap it in parchment paper, weight it down for a few hours, then dry it on a reel.

If higher percentages are to be obtained, the prepared and dried gauze is drawn once or oftener through the fresh portions of the iodoform solution.

8. *Iodoform Gauze* (Billroth).

	20%
	PARTS.
Iodoform, very fine powder	200
Absorbent Gauze	1,000

Incorporate the Iodoform by means of a duster into the gauze, and rub it in dry, so as to divide it uniformly.

9. *Adhesive Iodoform Gauze* (Billroth).

50 per cent.	
Iodoform	500 *parts.*
Rosin	300 "
Alcohol	900 "
Ether	100 "
Glycerin	150 "
Absorbent Gauze	1,000 "

Dissolve the Rosin in the Alcohol and Ether, add the Glycerin, and saturate the gauze with this solution by means of kneading, and weighting it down for 2 or 3 hours. Then distribute the Iodoform over the gauze as uniformally as possible, wind it on a reel, and let it dry 24 hours.

If this gauze is to be prepared extempore, carbolized gauze may be used and the iodoform rubbed into it, each square yard requiring about 300 grains.

10. *Iodoform Gauze* (Woelfer).

20 per cent.	
Iodoform	200 *parts.*
Rosin	250 "
Alcohol	1,000 "
Glycerin	200 "
Absorbent Gauze	1,000 "

Dissolve the Rosin in the Alcohol, add the Glycerin, and saturate the gauze in the liquid by kneading and weighting down 2 or 3 hours. Then dust over it the Iodoform very uniformly, wind on a reel, and dry during 24 hours.

This may also be prepared extempore by using carbolized gauze and incorporating it in about 2 drachms per square yard.

11. *Naphthalin Gauze.*

20 per cent.	
Naphthalin	200 *parts.*
Rosin	100 "
Alcohol	1,200 "
Absorbent Gauze	1,000 "

Dissolve the solids in the Alcohol by the aid of a gentle heat, saturate the gauze in a warmed dish, weight it down, after three hours wind it on a reel, and dry for 24 hours.

Expressing the liquid is not practicable, as the naphthalin would crystallize out as soon as the temperature falls.

12. *Resorcin Gauze.*

10 per cent.	
Resorcin	120 *parts.*
Glycerin	120 "
Distilled Water	800 "
Alcohol	460 "
Absorbent Gauze	1,000 "

Dissolve the Resorcin in the liquids, saturate the gauze, and express to a weight of 2,250 parts.

* The special attention of our readers is directed to this excellent Formulary. It contains many hundred carefully tested and practical formulas for preparing unofficinal medicines, toilet articles, inks, etc., etc., and should be in the possession of every pharmacist. Published by Julius Springer, of Berlin.

13. *Salicylic Gauze* (Thiersch).

	4%	10%
	PARTS.	
Salicylic Acid.....	48	120
Alcohol.....	450	680
Hot Water.....1 000		700
Absorbent Gauze..1,000		1,000

Dissolve the Salicylic Acid in the liquids, saturate the gauze, express it to 2,250 parts, and dry upon strings or wooden rods.

14. *Fixed Salicylic Acid Gauze* Bruns, jr.).

	5%	10%
	PARTS.	
Salicylic Acid.....	60	120
Castor Oil..	25	50
or Rosin	12.5 }	25 }
Castor Oil.....	12.5 }	25 }
Alcohol.....1,415		1,330
Absorbent Gauze.....1,000		1,000

Proceed as in No. 1.

15. *Sero-Sublimate Gauze* (Lister).

Bichloride Mercury....	6 *parts.*
Horseblood Serum ...	600 "
Distilled Water.....	900 "
Absorbent Gauze.....1,000	"

Mix the Serum and Water, dissolve in it the Bichloride by trituration, filter, saturate the gauze with the filtrate, express to 2,250 parts and dry upon strings or wooden rods, avoiding exposure to daylight during the operation.

As horseblood serum is not always available, Diederich recommends as a substitute his solution of albuminate of mercury. The above formula would then become:

Bichloride of Mercury.	6 *parts.*
Chloride of Sodium...	6 "
White of Egg	30 "
Distilled Water.....1,460	"
Absorbent Gauze.....1,000	"

Dissolve the salts by trituration in the White of Egg previously well beaten and allowed to return to a liquid condition, then dilute with the water, and proceed as in the preceding formula.

Another substitute for horseblood albumen is afforded by the commercial dried blood albumen. Ten parts of this may be reckoned as equivalent to 100 parts of the serum; hence the 600 parts of serum will be represented by a solution of 60 parts of dry blood albumen in 540 parts of water.

16. *Sublimate Gauze* (Bergman).
½ per cent.

Bichloride of Mercury,	4 *parts.*
Glycerin	150 "
Alcohol	150 "
Distilled Water.....1,200	"
Absorbent Gauze.....1,000	"

Dissolve the Bichloride in the liquids, saturate the gauze, and dry on strings or wooden rods, avoiding exposure to daylight.

17. *Sublimate Gauze* (Maas).

	½%	1%
	PARTS.	
Bichloride Mercury.....	2.5	5.0
Chloride Sodium.....	500	500
Glycerin.....	200	200
Dist. Water..... 1,200		1,200
Absorbent Gauze. 1,000		1,000

Knead the Gauze in the solution, weight it down during a few hours, and dry upon strings or wooden rods with the exclusion of daylight.

18. *Sublimate Gauze* (German Army).

Bichloride Mercury...	50 *parts.*
Alcohol 5,000	"
Distilled Water.....7,500	"
Glycerin 2,500	"
Fuchsin.....	½ part.

Saturate with this solution such an amount of gauze that each square yard will contain about 2 grains of bichloride. After soaking, the gauze is drawn through a wringer, and dried as in No. 14 or 15. The object of coloring is to facilitate the identification of the sublimate gauze.

19. *Thymol Gauze* (Ranke).
1.6 per cent.

Thymol	16 *parts.*
Rosin	50 "
Spermaceti.....	500 "
Alcohol.....1,500	"
Absorbent Gauze... ..1,000	"

Dissolve with the aid of a gentle heat, saturate the gauze, weight it down a few hours, then wind on a reel, and dry during 24 hours.

20. *Sulphocarbolate of Zinc Gauze* (Bottini).
10 per cent.

Sulphocarbolate Zinc..	100 *parts.*
Hot Water.. 1,500	"
Absorbent Gauze.....1,000	"

Saturate the Gauze with the solution, weight it down a few hours, then dry on strings or wooden rods.

BIBLIOGRAPHY.

A MANUAL OF WEIGHTS AND MEASURES, including the Principles of Metrology; the Weights and Measures now in Use; Weight and Volume and their Reciprocal Relations; Weighing and Measuring; Balances (etc.). . . . Specific Weight and Specific Volume, etc. With Rules and Tables. By OSCAR OLDBERG, Pharm.D., Professor of Pharmacy (etc.). in the Illinois College of Pharmacy (etc.). Second ed., revised. 8vo, Chicago; 1887.

THE utility of this Manual is sufficiently shown by the fact that the first edition was so soon exhausted. It is certainly the most complete treatise on the subject existing in any language, everything being brought together here that has any bearing on the subject. The numerous tables of comparison between different standards of weights and measures, or different denominations of either, together with tables of specific gravity and other useful data, render the book an indispensable companion in the laboratory and at the desk. The author, as is well-known, has proposed a new system of pharmaceutical weights and measures, with a view of combining the advantages of the metric system, or establishing a certain harmony and correlation, with that to be used by physicians and pharmacists, which is at the same time to be so constructed that the units of weight are commensurable with those of measure, and so that the larger denominations may be divisible by 2 without fraction down to the lowest unit. The author was perfectly justified in explaining the details of his plan in the work, and we readily acknowledge its intrinsic merits. But we have no expectation that it will be adopted.

DOSE AND PRICE LABELS OF all the Drugs and Preparations of the U. S. Pharmacopœia of 1880, together with many unofficinal articles that are frequently called for [etc.]. *Second Edition.* Rewritten and thoroughly revised and enlarged, with an appendix, containing . . . many of the New Remedies lately introduced. By C. L. LOCHMAN, Philadelphia, 1887.

MR. LOCHMAN, who is well known to the profession as the translator of the German Pharmacopœia, and as the author of the Photographic Illustrations of Medicinal Plants, has rendered a signal service by preparing a new edition of his excellent labels. We can conceive of no better practical method to afford a ready reference to the whole staff of a pharmaceutical establishment than the plan of affixing to each container the corresponding label taken from this series. Each label gives all the information and instruction that is likely to be required at a moment's notice, including derivation or outline of preparation, definition, synonyms, practical hints for the dispenser, medical properties and uses and average doses. The employment of these labels, when permanently attached to the bottles and other containers in a pharmacy, will save much valuable time which would otherwise be consumed in searching for the desired information in the pharmacopœia, the dispensatories, and other works of reference. These are, of course, not rendered indispensable, but the data most generally required will be those available by merely handling the container.

The appendix contains all necessary details regarding the newer remedies and a very carefully prepared index facilitates reference.

There can be no better investment made than the purchase of at least two copies of this work by each proprietor of a pharmacy, one copy to be kept for reference, and the other to be cut up for the purpose of attaching the labels to the various receptacles.

REPORT OF THE COMMITTEE ON DISINFECTANTS, presented at the Fourteenth Annual Meeting of the American Public Health Association, held at Toronto, Canada, October 5th–8th, 1886, pp. 33, 8vo.

THIS report is very profusely illustrated with drawings of various appliances intended for the disinfection of clothing, bedding, and articles of commerce, to which the text chiefly relates.

SANITARY ENGINEERING. By WILLIAM KANE, C.E., Former Member of the North Carolina Board of Health. Third edition. Rhaleigh, pp. 90, 8vo.

WHILE this pamphlet is essentially a part of the report of the State Board of Health for 1885 and relates more particularly to local conditions, it, nevertheless, contains a large proportion of matter capable of general application and a knowledge of which is extremely desirable.

A MANUAL OF THE DISEASES OF THE SKIN. By BALMANNO SQUIRE, M.B. Lond., Surgeon to the British Hospital for Diseases of the Skin. Fourth smaller edition. London: J. & A. Churchill, 1887, pp. 194, 8vo.

THE author is known as an eminent authority in dermatology and the results of his experience render his writings of great value. We have already had occasion to make favorable comments upon former editions of this work which is well adapted to the purpose intended, namely, as a concise handbook.

THE USES OF MASSAGE IN MEDICAL PRACTICE. Translated from the German of Reibmeyer, with notes. By BENJAMIN LEE, A.M., M.D., Ph.D., etc. Philadelphia: 1887, pp. 44 & 22, sm. 8vo.

THIS interesting pamphlet contains also an essay on "Blood, and How to Make It; Fat, and How to Reduce It," and bibliographical references to recent works on massage.

REPORT OF THE COMMITTEE ON DISINFECTANTS. Presented at the Fourteenth Annual Meeting of the American Public Health Association. pp. 33, 8vo.

THIS paper describes a great variety of apparatus invented for commercial disinfection.

THIRTEENTH ANNUAL REPORT of the Council of the Pharmaceutical Society of Australia, with which is incorporated the Pharmaceutical Society of Victoria, 1887, pp. 15, 8vo.